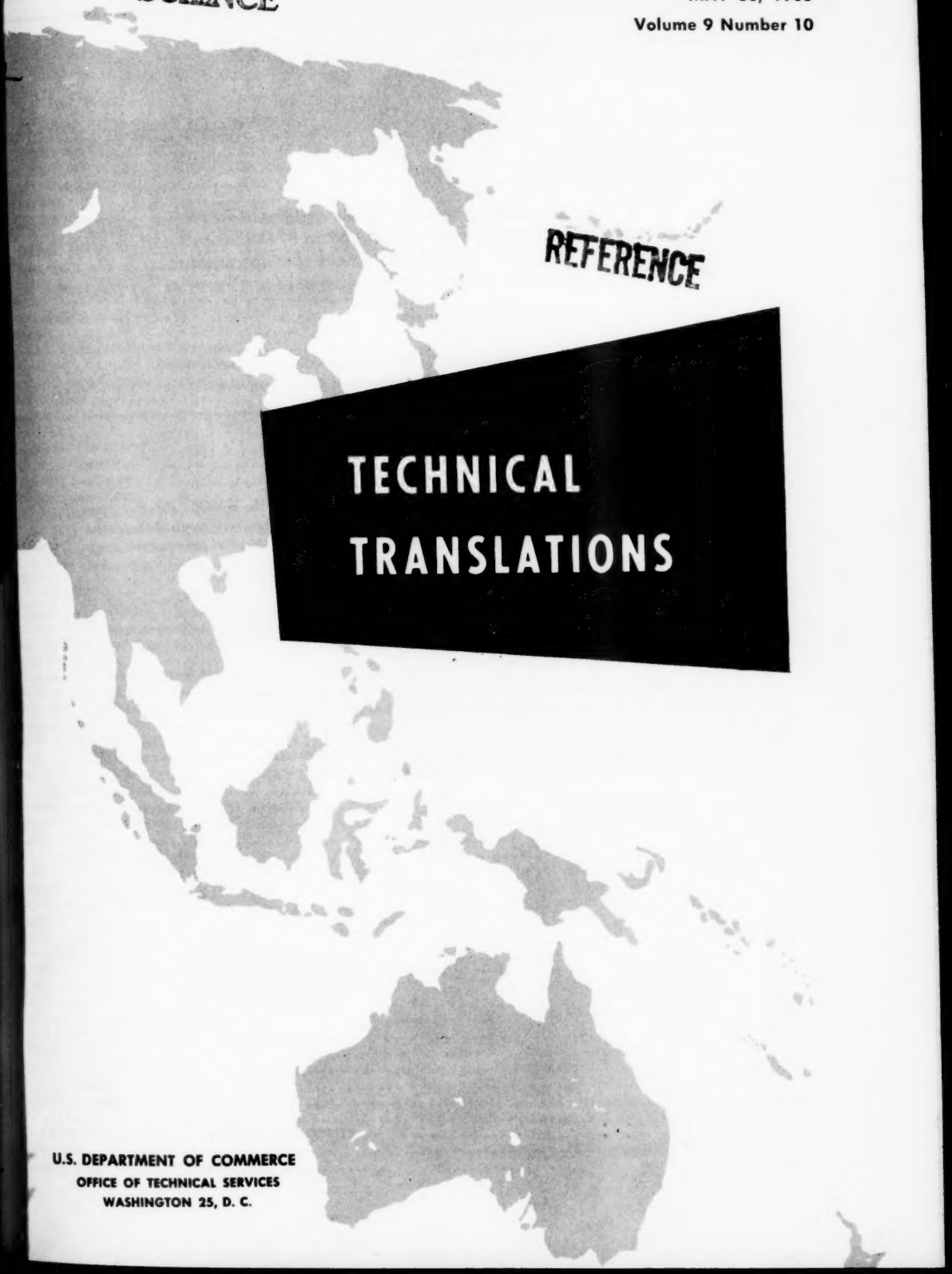
To: Science

SCIENCE

MAY 30, 1963
Volume 9 Number 10

REFERENCE

TECHNICAL TRANSLATIONS



U.S. DEPARTMENT OF COMMERCE
OFFICE OF TECHNICAL SERVICES
WASHINGTON 25, D. C.

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, *Secretary*

OFFICE OF TECHNICAL SERVICES

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Use of funds for printing this publication approved by the Director of the Bureau of the Budget, November 22, 1961

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UNITED STATES DEPARTMENT OF COMMERCE
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WASHINGTON 25, D. C.

TECHNICAL TRANSLATIONS

Volume 9, Number 10 Pages 975 - 1069 May 30, 1963

*Descriptors marked with an asterik are listed in the subject index.

BIBLIOGRAPHY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 103 (GENERAL SERIES). 13 Mar 63 [13]p. JPRS: 18118.
Order from OTS $0.50 63-21317

Abstract trans. of Academia Republicii Populare Romine. Comunicarile, 1962, v. 12, no. 12, p. 1267-1375.

DESCRIPTORS: *Abstracts, Bibliography, *Mathematics *Earthquakes, Arthropods, Fungi, Bacteria, *Plants, Trees, Grasses, *Geology, Stratigraphy, Paleoecology.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 113 (GENERAL SERIES). 25 Mar 63 [16]p. JPRS: 18327.
Order from OTS $0.50 63-21409

Abstract trans. of Akademie der Wissenschaften, Berlin. Monatsberichte (East Germany) 1963, v. 5, no. 1, p. 1-63.

DESCRIPTORS: *Abstracts, Bibliography, Mathematics, *Plasma physics, *Physical chemistry, *Biochemistry, Crystals, Photography, *Spectroscopy, *Cryogenics, *Magnetism, *Plastics.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 120 (GENERAL SERIES). 28 Mar 63 [20]p. JPRS: 18419.
Order from OTS $0.50 63-21451

Consists of abstracts of articles from the scientific and technical journals of Bulgaria and Rumania.

DESCRIPTORS: *Abstracts, Bibliography, Scientific personnel, Microbiology, Economics, Hydrology, Conferences, *Social sciences, Geology, *Biology, *Physics, Cancer, Computers, *Engineering.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 124 (GENERAL SERIES). 3 Apr 63 [16]p. JPRS: 18524.
Order from OTS $0.50 63-21491

Abstract trans. of Akademie der Wissenschaften, Berlin. Monatsberichte (East Germany) 1963, v. 5, no. 2, p. 65-144.

DESCRIPTORS: *Abstracts, Bibliography, *Solid state physics, *Physical chemistry, *Geology, *Biochemistry, *Metallurgy, *Spectroscopy, *Biology.

Library of Congress, Washington, D. C.
MONTHLY INDEX OF RUSSIAN ACCESSIONS. Apr 63, 325p.
Order from GPO $12.00/year

This index is a record of the publications in languages spoken in the Soviet Union currently received by the Library of Congress and a group of cooperating libraries. It consists of three parts: Part A lists monographic literature published after 1944, with the title in the original language preceded by its English translation; Part B lists periodicals published after 1946; Part C constitutes a subject guide to both the monographs and periodical articles listed in Parts A and B.

AGRICULTURE

ILLUSTRATED MANUAL OF FORAGE PLANTS OF CHINA. 2 Apr 63 [518]p. JPRS: 18494.
Order from OTS $7.00 63-21477

Trans. of mono. Chung Kuo Ssu Liao Chih Wu T'u P'u, Peiping, 1959, 517p.

DESCRIPTORS: *Plants (Botany), Food, *China, *Taxonomy, *Grasses, Distribution, *Trees, *Vegetables.

A total of 500 species of often seen forage plants are collected in this volume.

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 58. 25 Mar 63 [29]p. JPRS: 18316.
Order from OTS $0.75 63-21400

Trans. from Sovetskaya Kirgiziya (USSR) 1963, 4 Jan; Pravda, Moscow (USSR) 1963, 14 Jan; 16 Jan, p. 4; Pravda, Leningrad (USSR) 1962, 22 Dec, p. 1; Sel'skaya Zhizn' (USSR) 1963, 14 Feb, p. 1; Izvestiya (USSR) 1963, 11 Jan.

DESCRIPTORS: *Industrial production, *Tractors, *Agricultural machinery, *Machine tools, Industrial plants, Supplies, Costs.

Contents:
Development of new single-design and heavy machine tools
Supply difficulties of Kishinev tractor assembly plant, by A. Veremeenko and M. Efimenko
Crash program at the Kirov tractor plant, by I. Isayav
Spare parts supply difficulties, by B. Bazhanov
New machinery for the Tselinnyi Krai, by S. Sdobnikov and D. Omel'yanenko
Price disparities in agricultural machinery, by S. Karpenko.

Rubin, B. A., and Perevyazkina, L. M.
THE ROLE OF TANNING SUBSTANCES IN THE RESISTANCE OF COTTON TO WILT [Rol' Dubil'nykh Veshchestv v Yavleniyakh Ustoichivosti Khlopchatnika k Viltu]. [1962] [11]p. 9 refs.
Order from OTS or SLA $1.60 63-13582

Trans. of Akad[emiya] Nauk SSSR. Doklady [1951] v. 79, no. 2, p. 303-306.
Another trans. is available from Science Museum Library, London as 52/2600.

DESCRIPTORS: *Cotton, *Tannic acids, Diseases, Plants, *Fungus infections, Phenols, Solubility, Fungi.

Sebto, A. G.
VARIETIES OF FODDER SOYBEANS FROM THE FAR EAST (Sorta Kormovoi Soi Dal'nego Vostoka). 17 Oct 62, 12p. Trans. A-1372.
Order from OTS or SLA $1.60 63-13028

Trans. of Vsesoyuznyi Institut Rastenievodstva. Byulleten' (USSR) 1961, no. 9, p. 34-39.

DESCRIPTORS: Food, Feeding, *Vegetables, *Protein solutions, *Asia, Corn, *Cattle, *Nutrition, Plants.

Animal Husbandry

REORGANIZATION OF THE VETERINARY SERVICE IN BULGARIA. 25 Jan 63 [7]p. JPRS: 17303.
Order from OTS or SLA $1.10 63-15378

Trans. of Veterinarna Sbirska (Bulgaria) 1962, no. 10, p. 3-5.

DESCRIPTORS: *Veterinary medicine, Scientific organizations, Bulgaria.

Burdov, A. N.
ASSOCIATED VACCINES AGAINST MALIGNANT ANTHRAX AND ANAEROBIC INFECTIONS. [1962] [8]p. FASEB manuscript no. S 58-2.
Order from OTS or SLA $1.10 63-15412

Trans. of Veterinariya (USSR) 1962 [v. 39] no. 4, p. 31-33.

DESCRIPTORS: *Anthrax vaccine, *Anaerobiology, *Infections, Immunity, *Animals, Antigens and antibodies, Veterinary medicine.

By means of our method of neutralizing the residual formaldehyde in formol vaccines, it is possible to prepare associated vaccines of inactivated (formolized) and liver components. The associated vaccines against malignant anthrax and anaerobic infections, under the conditions of experiments on guinea pigs and sheep, with a single immunization, proved to be immunogenic, establishing immunity against artificial infection with lethal doses of the microorganisms of malignant anthrax, emphysematous carbuncle, and sheep and ovine blackleg (symptomatic anthrax). In sheep, a strong simultaneous immunity against malignant anthrax, emphysematous carbuncle, and blackleg persisted for 5 1/2 months after inoculation with the associated trivalent vaccine. The immunogenic properties of the associated vaccines persisted for not less than a year. (Author)

ASTRONOMY

Ksanformaliti, L.
ON THE THRESHOLD OF OTHER WORLDS. 3 Jan 63, 12p. FTD-TT-62-1465.
Order from OTS or SLA $1.60 63-15521

Unedited rough draft trans. of Radio, Moscow (USSR) 1963, no. 3, p. 10-12.

DESCRIPTORS: *Astronomical observatories, Electronic equipment, Computers, Photomultipliers, Temperature sensitive elements, Bolometers, Television systems, Telescopes.

An account of the role of electronics engineering in astronomy.

Moiseev, N.
ON ONE SIMPLIFIED SCHEME OF THE PLANETARY SYSTEM. [1962] [4]p.
Order from OTS or SLA $1.10 63-10534

Trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R.S.S., 1936, v. 1(10) no. 2(79) p. 67-68.

DESCRIPTORS: *Planets, *Solar systems, Design, *Celestial mechanics, Gravity, Rings, Distribution, N-body problem.

The point mass disturbing planetary potential function is replaced by that of a finite numer of infinitely-thin rings concentric on the center of mass of the Solar System. (Author)

Moralevich, Yurii.
DOWNFALL OF A LEGEND: DOES COSMIC COLD EXIST? 11 Oct 62 [5]p. FTD-TT-62-1403; AD-290 835.
Order from OTS or SLA $1.10 63-15346

Unedited rough draft trans of Zarya Vostoka (USSR) 1962, no. 182, 5 Aug, p. 4.

DESCRIPTORS: *Space environmental conditions, Temperature, Cooling, Space flight, *Thermal insulation, Vacuum systems.

Astrophysics

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 56. 1 Apr 63 [62]p. JPRS: 18467.
Order from OTS $16.00/year 61-11147-56
foreign $20.00/year

DESCRIPTORS: *Geophysics, Astronomy, *Meteorology, *Oceanography, *Upper atmosphere, *Space probes, Astrophysics.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

Antonov, S., Bogomolov, K. S. and others.
PHOTOGRAPHIC PROCESSES USED IN MAKING THE FIRST PHOTOGRAPHS OF THE FAR SIDE OF THE MOON, tr. by B. W. Kuvshinoff. 22 Mar 62 [16]p. 7 refs. APL/JHU TG 230-T282.
Order from OTS or SLA $1.60 62-25066

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 9, p. 20-29.

DESCRIPTORS: Moon, *Photography, *Lunar probes, Photographic emulsions, Radiation effects, Cosmic rays, Photographic equipment, Photographic processors.

Gal'perin, Yu. I. and Ershkov, A. I.
AURORA BOREALIS. 22 Mar 63 [47]p. JPRS: 18276.
Order from OTS $1.25 63-21383

Trans. of [Vsesoyuznoe Obshchestvo po Rasprostraneniyu Politicheskikh i Nauchnykh Znanii]. Seriya 9 (USSR) 1963, no. 2.

DESCRIPTORS: *Aurorae, Astronomical data, *Space probes, Astronautics.

Gurshtein, A. A.
OBSERVATIONS OF ARTIFICIAL EARTH SATELLITES [O Nablyudeniyakh Iskusstvennykh Sputnikov Zemli]. 28 Sep 62 [22]p. FTD-TT-62-975; AD-287 669.
Order from OTS or SLA $2.60 63-13221

Unedited rough draft trans. of Moskovskii Institut Inzhenerov Geodezii, Aerofotos"emki i Kartografii. Trudy (USSR) 1960 [v. 40] p. 103-113.

DESCRIPTORS: *Satellites (Artificial), Orbital trajectories, Optical tracking, *Tracking telescopes, Design, Photography.

A brief survey is made of the basic methods for determining the orbits of satellites and using observational material, and also of the existing instruments and methods used. The main body of the text is devoted to the design of new instruments proposed by members of the Student Scien..fic Society of Moscow Institute of Geodetic, Aerial Survey, and Cartographic Engineers especially for observations of artificial earth satellites. (Author)

Kalitin, N. N.
VERTICAL MOVEMENTS OF AIR IN THE STRATOSPHERE DUE TO HEATING OF COSMIC DUST BY SOLAR RADIATION [Vertikal'nye Peremeshcheniya Vozdukha v Stratosfere kak Sledstvie Nagrevaniya Kosmicheskoi Pyli Solnechnoi Radiatsiei]. [1962] 2p.
Order from OTS or SLA $1.10 62-18267

Trans. of Priroda (USSR) 1947 [v. 36] no. 11, p. 53-54. Another trans. is available from SLA as RT-4605.

DESCRIPTORS: Motion, Air, *Stratosphere, Heating, Cosmic rays, *Solar radiation, Theory, *Air mass analysis.

Lyubarskii, K. A.
A STATISTICAL STUDY OF BOLIDES (Statisticheskoe Izuchenie Bolidov) tr. by Jack Gallob. [1962] [25]p. 10 refs.
Order from OTS or SLA $2.60 63-15313

Trans. of Meteoritika (USSR) [1953] v. 11, p. 153-164.

DESCRIPTORS: *Meteors, Periodic variations, Distribution, Acoustic properties, Electromagnetic properties, Physical properties, Tables, *Statistical analysis.

Radzievskii, V. V.
ON A DISINTEGRATION MECHANISM OF ASTEROIDS AND METEORITES. [1962] 5p. 3 refs.
Order from OTS or SLA $1.10 62-10651

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1954, v. 97, no. 1, p. 49-52.

DESCRIPTORS: *Asteroids, *Meteorites, Separation, Rotation, *Solar radiation, Bremsstrahlung, Albedo (Astronomy), Centrifugal fields, Inertia.

Radzievskii, V. V.
ON THE INFLUENCE OF ANISOTROPY OF THE RERADIATION OF SOLAR RADIATION ON THE ORBITAL MOTION OF ASTEROIDS AND METEORITES. [1962] 13p. 5 refs.
Order from OTS or SLA $1.60 62-10653

Trans. of Astron[omicheskii] Zh[urnal] (USSR) 1952, v. 29, no. 2, p. 162-170.

DESCRIPTORS: *Asteroids, *Meteorites, Rotation, Solar radiation, Bremsstrahlung, Anisotropy, Centrifugal fields, Inertia.

Radzievskii, V. V.
ON THE QUESTION OF THE DISINTEGRATION OF METEORITIC "TWINS". [1962] 4p. 8 refs.
Order from OTS or SLA $1.10 62-10652

Trans. of Astron[omicheskii] Zh[urnal] (USSR) 1954, v. 31, no. 5, p. 433-435.

DESCRIPTORS: *Meteorites, Asteroids, Separation, Rotation, Solar radiation, Bremsstrahlung, Centrifugal fields, Errors, Corrections.

The inconsistency of the method and specific results of M. Plavec, concerning the rate of disintegration of meteoritic "twins", is shown and corrected data are presented. (Author)

Yakhontova, N. S.
THE COSMIC ROCKET: FIRST ARTIFICIAL SMALL PLANET. [1962] 16p. (1 table 2 figs. omitted).
Order from OTS or SLA $1.60 62-14015

Trans. of Priroda (USSR) 1959 [v. 48, no. 4] p. 5-8.

DESCRIPTORS: *Asteroids, Planets, Rockets, Orbital flight paths, Interplanetary trajectories.

Considerable information is reviewed, in a "popular" style, on asteroids and their orbits.

BEHAVIORAL SCIENCES

Personnel and Training

BIOGRAPHIES OF SOVIET SCIENTISTS. 8 Apr 63 [76]p. 38 refs. JPRS: 18590.
Order from OTS $2.00 63-21529

Trans. of 27 selected biographical articles from various Soviet sources.

DESCRIPTORS: *Scientific personnel, *Biographies, Personnel, *Medical personnel.

Contents: B. Aniline, S. P. Arkhangel'skii, I. V. Davydovskii, I. G. Eikhfel'd, S. A. Glikman, G. N. Kassil', M. I. Kolomiichenko, V. Kovalenko, P. A. Kupriyanov, S. M. Kurbatov, A. L. Kursanov, L. D. Landau, S. A. Lebedev, D. A. Napadenskii, P. P. Obnorskii, I. S. Popov, Z. K. Rakhmatullin, D. I. Shcherbakov, A. N. Velikoretskii, I. M. Vish, M. V. Vol'kenshtein, A. S. Zenin, K. Z. Zhumatov, N. M. Zhavoronkov, V. I. Gol'danskii, N. A. Toropov, N. S. Nametkin.

BIOGRAPHIC INFORMATION ON DOCTOR PETUR V. GOCHEV, BULGARIAN GEOLOGIST. 11 Mar 63 [6]p. JPRS: 18049.
Order from OTS $0.50 63-21292

Trans. of Priroda i Znanie (Bulgaria) 1962 [v. 15] no. 10, p. 23-24.

DESCRIPTORS: *Scientific personnel, Geology, Bulgaria, *Biographies

INFORMATION ON EAST EUROPEAN SCIENTIFIC PERSONALITIES. 25 Mar 63 [22]p. JPRS: 18320.
Order from OTS $0.75 63-21403

Trans. of Khidrotekhnika i Melioratsii (Bulgaria) 1962 [v: 7] no. 1, p. 31-32; Nauka Polska, 1962, v. 10, no. 4, p. 177-182; Instytut Tele- i Radiotechniczny. Prace (Poland) 1962, v. 6, no. 2, p. 119-120.

DESCRIPTORS: *Scientific personnel, *Engineering personnel, *Biographies, Personnel

Contents:
Bulgarian hydrological engineers; biographical sketches, by Iliya Gadzhalski
From the work of the commission on the qualifications of scientific workers and sections of the Polish Academy of Sciences, by Anastazja Strus
Work of the Institute of Tele- and Radio-Engineering, 1962, v. 6, no. 2: Authors of articles.

INSTITUTIONS APPROVED FOR POST-GRADUATE TRAINING LIST. 5 Apr 63 [43]p. JPRS: 18578.
Order from OTS $1.25 63-21521

Trans. of Ministerstvo Vysshego i Srednogo Spetsial'nogo Obrazovaniya. Byulleten' (USSR) 1963, no. 2, p. 1-19.

DESCRIPTORS: *Education, *Universities, *Scientific organizations, Directories.

RECENT RUMANIAN STATUTES GOVERNING SCIENCE, ENGINEERING, AND HIGHER EDUCATION. 12 Mar 63 [202]p. JPRS: 18075.
Order from OTS $3.50 63-21302

Trans. of a series of articles on recent selected Rumanian statues governing, science, engineering, and higher education published in Bucharest 1961-62.

DESCRIPTORS: *Rumania, *Scientific personnel, *Engineering personnel, *Education, Universities, Geology, Scientific organizations, *Culture, Functions, Agriculture, Mechanization, Maintenance personnel, Medical personnel, Commerce, Electrical industry, Mining engineering, Textile industry, Shoes, Clothing, Glass, Metals, Rubber, Plastics, Food, Metallurgy, Machines, Construction, Radioactive isotopes, Economics, Production, Instructors.

Elyutin, V.
LIST OF OFFICIALLY RECOGNIZED SCIENCE SUBJECTS AND FIELDS OF SPECIALIZATION. Order of USSR Minister of Higher and Secondary Specialized Education, 13 Oct 62 (no. 345). 26 Mar 63 [16]p. JPRS: 18378.
Order from OTS $0.50 63-21429

Trans. of Ministerstvo Vysshego i Srednogo Spetsial'nogo Obrazovaniya. Byulleten' (USSR) 1962, no. 11, p. 6-11.

DESCRIPTORS: *Education, *Science, Directories

Loginov, Vladislav and Salmanov, Leionid.
ON THE PREPARATION OF MAN FOR FLIGHTS INTO THE COSMOS. 20 Nov 62 [8]p. FTD-TT-62-1592.
Order from OTS or SLA $1.10 63-13909

Psychology

HIGHER NERVOUS ACTIVITY: [SELECTED] TRANSLATIONS. 25 Mar 63 [56]p. 18 refs. JPRS: 18315.
Order from OTS $1.50 63-21399

Trans. of #Zhurnal Vysshei Nervnoi Deyatel'nosti (USSR) 1962, v. 12, no. 6, p. 985-1010 and 1085-1096. ##Another trans. of (p. 1001-1010) is available from OTS $1.00 in 63-21107, JPRS-17586, 12 Feb 63 [41]p.

DESCRIPTORS: *Physiology, *Psychology, Brain, Spinal cord, *Nervous system, *Reaction (Psychology), Aircraft, *Flight, Space vehicles, *Adaptation (Physiology), *Conferences.

Contents:
Philosophical problems in physiology of nervous activity and psychology, by O. A. Krylov and V. I. Chumak
Natural scientific and philosophical problems of the present state of science of the brain, by F. A. Sarkisov
##Interaction of analysors during flight on board aircraft and space vehicles, by V.V. Baranovskii and others
Gagry Conference (no. 4) by O. S. Adrianov and M. Ya. Rabinovich.

Unedited rough draft trans. of Kommunist [Erevan] (USSR) 1962, 8 Sep, p. 3.

DESCRIPTORS: *Space flight, Manned spacecraft, *Astronauts, Training, *Training devices.

Adrianov, O. S.
THE BRAIN: ORGAN OF THOUGHT. 22 Jan 62 [31]p. 13 refs. JPRS: 12289.
Order from OTS or SLA $3.60 62-15782

Trans. of mono. [Mozg-Organ Myshleniya] Moscow, 1961 [38p.].

DESCRIPTORS: *Brain, Reasoning, Science, Religion, Nervous system, *Bioelectronics, Excitation, Inhibition, Sleep, Stimulation, Receptors, *Speech, *Cybernetics.

Contents:
Science and religion
"Geography" of the brain
Biocurrents in nervous tissue
Excitation and inhibition
Sleep and dreams
Signals and signaling systems
Mind -- A property of the brain
Interesting and useful knowledge
Thought-reading
The brain and machines
Projects for readers
Recommended reading
Short glossary

Firov, L. A.
A COMPARATIVE STUDY OF THE BEHAVIOR AND OF CERTAIN VEGETATIVE FUNCTIONS OF CHIMPANZES. [1962] [7]p. (figs. omitted) 4 refs.
Order from OTS or SLA $1.10 62-20304

Trans. of A[kademiya] N[auk] SSSR. D[oklady] 1961, v. 141, no. 6, p. 1522-1524.

DESCRIPTORS: *Behavior, Stimulation, Conditioned reflex, *Primates, Motor reactions, Nervous system, Anxiety.

BIOLOGICAL SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 122 (BIOLOGY AND MEDICINE SERIES). 2 Apr 63 [13]p. JPRS: 18487.
Order from OTS $0.50 63-21471

Abstract trans. of Polski Tygodnik Lekarski, 1962, v. 17, no. 52, p. 2017-2047 and 1963, v. 18, no. 1, p. 1-32.

DESCRIPTORS: *Abstracts, Bibliography, *Biology, *Medicine, Diseases, Throat, Psychology, Surgery, Radiobiology, Drugs, Infants, Neurology, Heart, Genetics, Cells (Biology).

APPLIED BIOLOGY: TRANSLATIONS. 19 Mar 63 [23]p. 29 refs. JPRS: 18206.
Order from OTS $0.75 63-21354

Trans. of Moskovskoe Obshchestvo Ispytatelei Prirody. Byulleten'. Otdel Biologicheskii (USSR) 1962, v. [37](67) no. 5, p. 10-18 and 120-127.

DESCRIPTORS: Biology, Ecology, *Adaptation (Physiology), *Cetacea, Aquatic animals, Velocity, *Ship models, *Models (Simulations), *Marine biology, Plants, *Water, Decontamination, Cesium, Strontium, *Radioactive isotopes

Contents:
On the adaptations of cetaceans to rapid swimming and the possibility of using these adaptations in shipbuilding, by A. G. Tomilin
The effect of various biomasses of water plants on trace concentrations of cesium and strontium in tanks with a low flow rate, by A. L. Agre and others

HERALD OF THE ACADEMY OF SCIENCES OF THE USSR: SELECTED ARTICLES. 31 Jan 63, 35p. FTD-TT-62-1164.
Order from OTS or SLA $3.60 63-15530

Unedited rough draft trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1962 [v. 17] no. 4, p. ##44-50, 65-70, ##76-81.
##Other translations are available from OTS or SLA $4.60 in 62-32897, JPRS-15187, 10 Sep 62 [45]p.

DESCRIPTORS: *Industrial medicine, Adaptation (physiology), Biological environment, *Immunology, *Antibodies, Production, *Biochemical genetics, Nucleic acids, Proteins, *Space environmental conditions, *Space medicine, *Weightlessness, *Acceleration tolerance.
Contents:
##Adaptive reactions of an organism under occupational conditions, by A. A. Letavet
Experimental biology and new concepts of immunogenisis, by N. N. Zhukov-Verezhnikov and others
##Possiblities of protective adaptations of an organism and their limits under conditions of maximum G-forces and weightlessness, by V. V. Parnin and others.

PROBLEMS OF SPACE BIOLOGY, 1962, VOL. 2.
27 Mar 63 [440]p. 398 refs. JPRS: 18395.
Order from OTS $6.00 63-21437

Trans. of Problemy Kosmicheskoi Biologii (USSR) 1962, v. 2, p. 1-430.

DESCRIPTORS: *Space biology, *Space medicine, Space flight, Radiation tolerance, Telemeter systems, Histology, Control systems, Astronauts, Training, Motion sickness, Spaceships, Cosmic rays, Radiation effects, Pathology, Microbiology, Weightlessness, Speech transmission, Acceleration, Physiology, Laboratory animals, Algae, Photosynthesis, Protons, Mutations, Elementary particles, Radioprotective agents.

Contents:

Preliminary data on physiological studies during human flight into space, by Yu. M. Volynkin and others
Problems of radiation safety of space flights, by A. V. Lebedinskii and Yu. G. Nefedov
Biological telemetering and space flight, by R. M. Baevskii
Cytological studies and space biology, by L. K. Lozina-Lozinskii
Nutritional problems under space flight conditions, by A. S. Ushakov and V. P. Bychkov
Some aspects of the man-machine problem in complex control systems, by V. G. Denisov
Physical exercise as a means of maintaining the constancy of the internal milieu of the cosmonaut's body, by A. V. Korobkov
General principles of special physical training of the cosmonaut, by L. V. Chkhaidze
Motion-sickness as a problem of space medicine, by G. L. Komendantov and V. I. Kopanev
Studies of the Biological effect of cosmic radiation on spaceships, by A. A. Gyurdzhyan
Effect of space flight factors on some biological indices in insects, by Ya. L. Glembotskii and G. P. Parfenov
Cytological and histological changes in the hematopoietic organs of mice under the influence of space flight on spaceships, by M. A. Arsen'eva and others
Pathological changes in the internal organs of animals under the influence of flight on spaceships, by V. G. Petrukhin
Microbiological and cytological studies on spaceships, by N. N. Zhukov-Verezhnikov and others
Effect of space flight factors of the satellite "Vostok-2" on haploid and diploid yeasts, by N. V. Kovyazin and others
Effect of space flight conditions on the seeds of higher plants and actinomycetes, by V. V. Khvostova and others
Problems of experimental study of effect of space radiation conditions on higher plants, by Yu. L. Sokolov and A. V. Gurskii
Ionizing radiation at altitudes of 180-340 kilometers and radiological safety during flights of spaceships, by V. E. Nesterov and others
Remote effect of space flights on higher nervous activity and some unconditioned reflexes, by L. D. Luk'yanova and others
Some human reactions under subgravity conditions, by E. M. Yuganov and others
Experience in the study of the quality of reception and transmission of speech under weightlessness conditions, by I. Ya. Borshchevskii and others
Reorganization of motor habits in the state of weightlessness, by B. A. Zhuravlev
Some physiological rules and regulations observed from the effect of impact accelerations, by S. A. Gozulov
Some characteristics of the hemodynamics and gas exchange in the lesser circulation during transverse chest-back accelerations, by A. A. Kiselev
Effect of long-lasting transverse accelerations on the human body, by A. R. Kotovskaya and others
Effects of different degrees of long-lasting transverse accelerations on the electrical reactions of the human cerebral cortex, by G. V. Izosimov and A. N. Razumeev
Limit of human tolerance to transverse accelerations and the physiological reactions of the body, by A. S. Barer
Effect of deprivation of sleep on some aspects of human higher nervous activity, by N. A. Rokotova and others
Effect of resistance to inspiration on breathing under increased pressure, by V. N. Alifanov and others
Some data on the effect of a closed system on the physiological functions of animals, by I. S. Breslav and others
Some data on the role of the time factor in the radiation reactions of the central nervous system, by N. N. Livshits and others
Comparative study of the productivity of various forms of unicellular algae, by M. G. Vladimirova and others
Some principles of intensification of photosynthetic productivity of a culture of unicellular algae, by V. E. Semenenko and others
Space flight significance of photoadaptation and photoreactivation in plant organisms, by A. A. Shakov and others
Some data on the biological effectiveness of protons with energies of 660 mev, by E. B. Kurlyandskaya
Mutational activity of anti-particles, by I. A. Rapoport and A. V. Miller
Effect of high energy protons on the rate of occurrence of mutations, by I. A. Rapoport and others
Action of radioprotective preparations against whole body irradiation with high energy protons, by S. P. Yarmonenko and others
The resistance of adrenalectomized and hypophysectomized rats to acute oxygen deficiency, by V. B. Malkin and A. F. Yurkov
Problem of the mechanism of development of high-altitude tissue emphysema, by E. A. Kovalenko
Possibilities of experimental evaluation of the cerebral blood supply under conditions of an altered gravitational field, by Yu. E. Moskalenko
Effect of prolonged limitation of motor activity on the activity of monkeys, by N. A. Rokotova and others

Donetskii, D. A., Elizarov, A. F. and others.
LONG-TERM STORAGE OF LYOPHILIZED PREPARATIONS IN VACUUM TEST TUBES [AND] LOCAL USE OF PANCREATIN IN DEEP BURNS. 13 Feb 63 [10]p. 5 refs. JPRS: 17618.
Order from OTS $0.50 63-21127

Trans. of Khirurgiya (USSR) 1962, v. 38, no. 12, p. 68-71.

DESCRIPTORS: *Freeze-drying, *Tissues (Biology), Storage, *Vacuum seals, Preservation, Seals (Stoppers), *Pancreatin, Animal extracts, *Burns, Therapy, Drugs.

A protective layer of emalite or nitrolak does not insure a substantial increase in the duration of preservation of a high vacuum in test tubes closed with rubber stoppers. The loss of the vacuum in the test tubes proceeds gradually, the degree of loss being proportional to the duration of storage. Due to the difficulty of ideal insertion of the stoppers, vacuum test tubes can, for practical purposes, ensure the preservation of the vacuum for only a comparatively short period of time -- within the limits of one year. On the basis of our observations, a four to five-year period is a limit for the maintenance of a vacuum in test tubes closed with rubber stoppers. (Donetskii) In the presence of deep burns, a 5 percent aqueous solution of pancreatin causes liquefaction of necrotic tissues, which accelerates their sloughing. The use of pancreatin on burns of degree III B and IV shortens the time required prior to skin transplantation. (Elizarov)

Mazanet, Mihai.
STUDY OF VIRUSES AT THE INFRAMICROBIOLOGY INSTITUTE IN BUCHAREST. 2 Apr 63 [8]p. (illus. omitted). JPRS: 18504.
Order from OTS $0.50 63-21482

Trans. of Contemporanul (Rumania) 1962, no. 51(845) 21 Dec, p. 7.

DESCRIPTORS: *Viruses, Microbiology, Rumania, Medical research, Cancer, Communicable diseases.

Mnukhin, S. and Ozeretskovskii, D.
CLINICAL LECTURES OF CHILDHOOD PSYCHIATRY, VOL. 2, BY G. E. SUKHAREVA: BOOK REVIEW (Klinicheskie Lektsii po Psikhiatrii Detskogo Vozrasta) tr. by Tatiana Boldyreff. 30 Jan 62, 10p.
Order from OTS or SLA $1.10 62-19124

Trans. of Zhur[nal] Nevropat[ologii i] Psikhiatrii (USSR) 1961, v. 61, no. 11, p. 1744-1746.
Another trans. is available from OTS or SLA $2.60 in 62-15931, JPRS-12432, 12 Feb 62 [23]p.

DESCRIPTORS: *Children, Psychiatry, Therapy, *Mental disorders, Diseases, Emotions, Neuroses, Nervous system, Abnormal psychology.

Venturini, A. and Cortesini, R.
SURGICAL TREATMENT OF CEREBRAL ARTERIAL INSUFFICIENCY (Terapia Chirurgica dell'Insufficienza Arteriosa Cerebral). [1962] 7p.
Order from SLA $1.10 62-20424

Trans. of Policlinico. [Sezione Pratica] (Italy) 1961, v. 68, p. 37-44.

DESCRIPTORS: *Surgery, Diseases, *Arteries, *Head, *Brain, Diagnosis, Prosthetics, Arteriosclerosis.

Anatomy and Physiology

MEDICINE AND PHYSIOLOGY [SELECTED] ARTICLES. 25 Mar 63 [25]p. 12 refs. JPRS: 18339.
Order from OTS $0.75 63-21417

Trans. of Fiziologichnyi Zhurnal (USSR) 1962, v. 8, no. 6, p. 701-108, 815-817, 827-829.

DESCRIPTORS: *Medicine, *Physiology, Universities, Medical research, Medical personnel, Radioactive isotopes, *Phosphorus, *Muscles, Fatigue (Physiology), *Potentiometers, *Radiobiology, Metabolism, Age factors, *Medical equipment.

Contents:
The Academy of Sciences Ukrainian SSR and its role in the formation of the leading medical schools, by O. F. Makarchenko and K. F. Duplenko
Age peculiarities of radioactive phosphorous assimilation by skeletal muscles in various degrees of fatigue, by O. V. Epshtein
Utilizing multichannel electronic potentiometers for physiological investigations, by V. Ya. Berezovs'kii and V. I. Mirutenko.

Kovalenko, E. A.
THE EFFECT OF HIGHLY RARIFIED ATMOSPHERE ON OXYGEN TENSION IN BRAIN TISSUE. [1962] [16]p. 18 refs.
Order from OTS or SLA $1.60 62-20306

Trans. of #[Fiziologicheskii Zhurnal SSSR] 1962, v. 48, p. 150-158.

DESCRIPTORS: *High altitude, *Atmosphere, Oxygen, *Oxygen consumption, *Brain, Dogs, Adaptation (Physiology), Hypoxia.

The results of raising dogs to an altitude of 15,000 meters are as follows: after 17-25 seconds muscles lose strength, reflexes governing posture disappear, and the animal drops to the floor of the apparatus; after 55-105 seconds cessation of breathing sets in, an indication that the limit of survival has been reached at this point, since irreversible reactions appear after this time period. Oxygen tension under these conditions drops rapidly and sharply, reaching on the average a third of the initial level (cortex) and a fifth in the cubcortical formations. After repeated ascents a significant increase in the period preceding cessation of respiration was noted. The degree of deoxygenation of brain tissue as estimated in terms of loxal oxygen tension by means of platinum electrodes, inserted for this purpose into the brain, does not always strictly correspond with the severity of hypoxia injury observed while the animal remains at the altitude of 15,000 meters. (Author)

Lát, J.
FUNCTIONAL STATE OF THE CENTRAL NERVOUS SYSTEM, NUTRITION AND GROWTH DURING ONTOGENESIS. [1962] [11]p. 24 refs. FASEB manuscript no. S 77-2.
Order from OTS or SLA $1.60 63-15561

Trans. of Voprosy Pitaniya (USSR) 1962, v. 21, no. 2, p. 3-10.

DESCRIPTORS: Physiology, *Growth, *Nervous system, *Nutrition, Psychology, *Genetics, *Reaction

Marits, A. M.
THE EFFECT OF HUNGER AND SATIATION ON THE ELECTRICAL ACTIVITY OF THE RETICULAR FORMATION AND CEREBRAL CORTEX. [1962] [10]p. 14 refs. FASEB manuscript no. S 247-2.
Order from OTS or SLA $1.10 63-19013

Trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 8, p. 889-892.

DESCRIPTORS: *Appetite, *Starvation, *Bioelectronics, *Brain, *Cerebral cortex, Conditioned reflex, Adaptation (Physiology)

The electrical activity of the reticular formation and cerebral cortex of starving animals differs appreciably from the activity taking place after satiation. The electrical activity of the reticular formation and cortex during relative starvation (for 24 hours) is inconstant. Depending on the state of the brain function, a sound stimulus (a loud bell) has opposite effects on the electrical activity of the cortex and reticular formation. (Author)

Parin, V. V.
TRAINING FOR FLIGHT INTO COSMOS. 21 Jan 63 [8]p. FTD-TT-62-1610.
Order from OTS or SLA $1.10 63-15707

Unedited rough draft trans. of Znanie-Sila (USSR) 1961 [v. 36] no. 4, p. 23-24.

DESCRIPTORS: *Training, *Space flight, *Astronauts, Space medicine, *Adaptation (Physiology) Weightlessness, Acceleration.

Shilling, N. V.
BIOELECTRICAL ACTIVITY IN DIFFERENT PARTS OF THE RABBIT'S NERVOUS SYSTEM IN RESPONSE TO STIMULATION OF THE VISUAL ANALYSOR. [1962] [14]p. 15 refs. FASEB manuscript no. S 359-2.
Order from OTS or SLA $1.60 63-19019

Trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 5, p. 587-592.

DESCRIPTORS: *Bioelectronics, *Nervous system, Rabbits, Stimulation, Reaction (Psychology), Brain, Visual perception, *Analyzers (Psychology), *Vision, Autonomic nervous system

Recordings of the electric activity in the occipital cortex, the hypothalamic region, the cerebellum and the upper cervical sympathetic ganglion under the influence of a flicker stimulus have shown that all the parts of the nervous system are involved in the response reaction. In response to the application of the light, the brief rise in the amplitude of the potential is usually followed by a gradual decrease in the electric activity of the upper cervical sympathetic ganglion. A similar pattern is also observed under certain circumstances (with increasing frequency and duration of the flicker stimulus) in the overlying parts of the nervous system. After stimulation ceased, the electric activity in all parts of the nervous system was restored to the original level. It was established that not only the central nervous system regions directly connected with visual reception, but also the centers and peripheral part of the sympathetic nervous system are involved in the reaction to stimulation of the visual analysor. (Author)

Starkov, P. M. and Aganyants, E. K.
RESTITUTION OF THE ELECTROENCEPHALOGRAM AFTER HYPOTHERMIA. [1962] [20]p. 24 refs. FASEB manuscript no. S 240-2.
Order from OTS or SLA $1.60 63-19010

Trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 6, p. 629-637.

DESCRIPTORS: *Electroencephalogy, *Hypothermia, *Body temperature, Bioelectronics, Rhythm, Cerebral cortex.

Cooling of cats and rabbits to a body temperature of 15 to 20° causes marked weakening of the EEG, but while the animals continue to breathe spontaneously in most cases the electrical activity does not cease completely. After hypothermia in cats to a body temperature of 17° to 20°, restoration of the EEG begins at a body temperature of 23°. At a body temperature of 35° the frequency of the α- and β-rhythms, and also the voltage of the α-waves are almost completely restored. In rabbits after hypothermia to 15° to 20°, normalization of the EEG begins at a body temperature of 25° Complete restitution of the frequency of the basic rhythms and of the voltage of the α-waves takes place when the initial body temperature has been regained. In the course of restitution of the EEG the increase in the frequency of the α- and β-rhythms precedes the restoration of the magnitude of the potentials of the α-waves. When the EEG is fully restored and synchronization of the electrical activity of the cerebral cortex is high at the initial body temperature of 38° to 39°, desynchronization in response to sound, light and cutaneous stimuli is weak. The restoration of the cortical response reaction in the form of desynchronization of its electrical activity begins in cats approximately 30 minutes after restoration of the initial body temperature, and in rabbits on the second day after hypothermia. (Author)

Ul'yanov, M. I.
THE NERVOUS REGULATION OF THE BLOOD SYSTEM. [1962] [17]p. 12 refs. FASEB manuscript n no. S 250-2.
Order from OTS or SLA $1.60 63-19014

Trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 8, p. 976-982.

DESCRIPTORS: *Nervous system, *Cerebral cortex, Blood, *Blood cells, Adaptation (Physiology), *Hemopoietic system, Erythrocytes, Leucocytes, Bone marrow, *Conditioned reflex, Reflexes, Reticuloendothelial system.

Convincing evidence was obtained which indicates that the motor-defensive reaction in dogs is accompanied by changes in the composition of the leukocytes and erythrocytes of the peripheral blood. The speed with which these changes develop their short duration and other features are evidence that their mechanism is mainly one of redistribution. This particular leuko-erythrocytic reaction may be produced by means of a conditioned reflex. This means that the cerebral cortex plays a direct part in the control of the morphological composition of the peripheral blood. A change in the functional state of the higher divisions of the central nervous system (CNS) during the formation of conditioned reflexes is reflected in the morphological composition of the peripheral blood. Studies of the sternal marrow showed that the hematological changes were due to changes in the state of hemopoiesis. Circumstances reactive changes affecting erythropoiesis and neutropoiesis and also the reticulo-endothelial system of the marrow were observed.

Volkova, O. V.
THE ESTROUS CYCLE IN THE RAT AFTER DENERVATION OF THE OVARIES. [1962] [6]p. 7 refs.
FASEB manuscript no. S 114-2.
Order from OTS or SLA $1.10 63-15991

Trans. of #Byulleten' Eksperimental'noi Biologii i Meditsiny (USSR) 1962, v. 53, no. 2, p. 89-92.

DESCRIPTORS: *Reproductive system, *Ovaries, Surgery, Rats, Cells (Biology), Morphology

A systematic study of the phases of the estrous cycle through parallel examinations of vaginal smears and ovarian structure in normal animals and animals subjected to ovarian denervation was done, to determine the incidence, degree, and nature of disturbances in ovarian function. (Author)

Yurasov, V. F.
CEREBRAL AND VISCERAL TEMPERATURE REACTIONS TO COOLING OF DIFFERENT PARTS OF THE CENTRAL NERVOUS SYSTEM. [1962] [28]p. 34 refs.
FASEB manuscript no. S 9-2.
Order from OTS or SLA $2.60 63-15427

Trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 4, p. 413-421.

DESCRIPTORS: *Hypothermia, Adaptation (Physiology), *Brain, Spinal cord, Cerebral cortex, *Body temperature, Nervous system.

Regardless of the place where the CNS is cooled, and other things being equal, the temperature drop is most pronounced and rapid on the upper level of the brain (cortex), less so in the middle level and least of all in the lower level. The temperature reactions of the viscera vary with the region cooled, and the reactions differ when the same region is cooled. Direct cooling of the brain disrupts the normal temperature relations of the viscera and different levels of the brain. Rectal temperature does not reflect the extent of hypothermia of the viscera or brain. Thermoregulation of the viscera is effected by the diencephalon with the cerebral cortex exerting a moderating influence. The sensitivity and resistance of the different parts of the brain to direct cooling vary. Perfusion of the ventricles of the brain (by A. P. Golovin's method) makes it possible to subject the different parts of the CNS to local cooling. (Author)

Biochemistry

Klein, E. E.
THE OXIDATION OF GLUTAMINIC ACID AND ITS QUANTITATIVE DISTRIBUTION IN VARIOUS PARTS OF THE BRAIN. [1962] [11]p. 11 refs.
Order from OTS or SLA $1.60 62-20324

Trans. of A[kademiya] N[auk] Gruzinskoi SSR [Tiflis]. [Soobshcheniya] 1954, v. 15, [no. 1] p. 13-20.

DESCRIPTORS: *Oxidation, *Glutamic acid, *Brain, Quantitative analysis, Distribution.

The oxidation reaction of glutamic acid proceeds at a greater rate in the dendritocellular mass (grey matter) than in the axons (white matter). The intensity of the reaction depends on the functional nature of the particular area. Greatest intensity is demonstrated by dendrito-cellular masses of those parts which are associated with motor functions. The distribution of the substrates of the reaction, is uniform between the various parts, irrespective of function. (Author)

Nametkin, S. S., Malnikov, N. N., and Bokarev, K. S.
PRÉPARATION DE L'HETEROAUXINE, tr. by Kefeli. 19 Apr 62 [19]p. 34 refs. CEA Trans. no. R 1608 (text in French).
Order from OTS or SLA $1.60 62-33747

Trans. in French of #Zh[urnal] Prikl[adnoi] Khim[ii] (USSR) 1956, v. 29, p. 459-463.

DESCRIPTORS: *Growth substances, *Indoles, *Acetic acids, Synthesis, Copper catalysts, Ethers.

On établit que lors de l'application d'une méthode améliorée de préparation d'hétéroauxine, à partir d'indole et d'ester diazo-acétique, on peut synthétiser l acide β-indolylacétique rendement maximum de 74 pour cent en y incluant l'indole entré en réaction. Lors de l étude de l influence des solvants et catalyseurs sur le rendement en acide β-indolyl acétique au cours de son obtention, on a établi que les meilleurs catalyseurs sont le cuivre et le chlorure de cuivre et le meilleur solvant est l'éther de pétrole. (Author)

Neifakh, E. A.
SPECIFIC INHIBITION OF REDOX ACTIVITY OF GLYOCLASES BY INHIBITORS OF FREE RADICAL REACTIONS. [1962] 11p. (figs. omitted) 18refs.
Order from OTS or SLA $1.60 63-10180

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 142, no. 6, p. 1405-1408.

DESCRIPTORS: Inhibition, *Glycolysis, *Enzymes, *Oxidation-reduction reactions, Hydrases, *Free radicals, Metals, Reduction (Chemistry).

The redox enzymes have been found to contain Zn or can contain admixtures of other metals, and also that metal ions make it possible for radicals to recombine. It is concluded that metal ions are essential to the inhibition of enzymes by free radicals. This research shows that the investigated inhibitors being specific to a free radical mechanism, act to depress the redox activity of glycolytic enzymes. (Author)

Poglazov, B. F.
MYOSIN-LIKE PROTEIN IN THE BRAIN TISSUE. [1962] [8]p. 27 refs.
Order from OTS or SLA $1.10 62-20362

Trans. of #Byulleten' Eksperimental'noi Biologii i Meditsiny (USSR) 1961, v. 52 [no. 9] p. 56-59.

DESCRIPTORS: *Myosin, *Proteins, *Brain, *Cells (Biology), Biochemistry, Adenosine phosphates.

The results obtained indicate the presence in brain tissue of a myosin-like protein and confirm the hypothesis with respect to its presence in any type of cell, apparently for the purpose of bringing about various protoplasmic movements and the regulation of osmotic phenomena.

Popenenkova, Z. A.
CHANGES IN SEROTONIN CONTENT IN THE BLOOD AND OTHER ORGANS OF RABBITS FOLLOWING TYPHOID INFECTION. [1962] [7]p. 3 refs.
Order from OTS or SLA $1.10 62-20312

Trans. of #Byulleten' Eks[erimental'noi Biologii i Meditsiny] (USSR) 1961 [v. 51] no. 2, p. 32-35.

DESCRIPTORS: *Serotonin, *Blood, Lungs, Brain, Skin, Intestine, *Typhoid.

Skvirskaya, E. B. and Babii, T. P.
COMPOSITION AND METABOLISM OF NUCLEIC ACIDS IN FUNCTIONALLY DIFFERENT PARTS OF THE NERVOUS SYSTEM AND IN THE BRAIN OF ANIMALS OF DIFFERENT AGES. [1962] [19]p. (Eng. refs. omitted) 3 refs.
Order from OTS or SLA $1.10 62-20320

[Condensed] trans. of Ukr[ayins'kyi] Biokhimichnyi Zhurnal (USSR) [1961] v. 33, no. 5, p. 647-656.

DESCRIPTORS: Nucleic acids, *Brain, *Ribonucleic acids, *Desoxyribonucleic acids, Animals, *Age, Nucleotides, Metabolism, Phosphorus, Tracer studies, *Nucleic acids.

It was established that ribonucleic acid (RNA) in the central nervous system (CNS) and the peripheral system of cats is heterogeneous in its nucleotides. The composition of RNA and deoxyribonucleic (DNA) and the proportion of contained nitrogen components in the brain of rabbits during the process of development remains unchanged, a finding which confirms the absence of age specificity for the nuclear acids of the brain. It was further established that for the RNA of the investigated parts of the nervous system and the whole brain in rabbits of various ages of all nucleotides the metabolism of phsophorus of adenine and of uracil nucleotides appears to be the most active. (Author)

Tupikova, Z. N.
A COMPARISON OF GLYCOGEN METABOLISM IN THE CEREBELLUM AND THE LARGE HEMISPHERES. [1962] [11]p. 19 refs.
Order from OTS or SLA $1.60 62-20311

Trans. of Nervnaya Sistema (USSR) 1960, no. 2, p. 32-36.

DESCRIPTORS: *Glycogen, *Metabolism, *Cerebellum, *Brain, Glucose, Lactic acid, Carbon compounds, Biochemistry.

Warburg, Otto, Geissler, A. W., and Lorenz, S.
CO_2 PRESSURES OVER BICARBONATE - CARBONATE MIXTURES (CO_2-Drucke über Bicarbonat-Carbonatgemischen). [1962] [2]p. (foreign text included) 1 ref.
Order from SLA $1.10 62-18871

Trans. of Z[eitschrift für] Naturforsch[ung] (West Germany) 1961, v. 16b, p. 283.

DESCRIPTORS: *Bicarbonates, *Carbonates, Mixtures, *Carbon dioxide, Vapor pressure, Tables

Wettstein, A.
BIOSYNTHESIS OF THE STEROID HORMONES (Biosynthese des Hormones Steroides). Aug 62, 30p. 150 refs.
Order from SLA $2.60 63-10090

Trans. of Experientia (Switzerland) 1961, v. 17 [no. 8] p. 329-[343].

DESCRIPTORS: Biosynthesis, *Steroids, *Hormones, Metabolism, *Corticosteroid agents, Hydroxides, Adrenocorticotropic hormone, Bibliography, *Cholesterol, *Progesterone, *Estrogens, *Androgens, Acetic acids, Allyl radicals, Testosterone, *Aldosterone.

A review of the literature.

Zajdela, F. and Buu-hoi, N. P.
CANCEROGENIC ACTIVITY OF NEW ANGULAR BENZACRIDINES. [1962] 8p.
Order from K-H $10.00 K-H 5756e

Trans. of Internation[al] Cancer Congress (no. 5) Paris, 16-22 July 50. [Proceedings] p. 184-189.

DESCRIPTORS: *Acridines, *Benzene derivatives, *Cancer research, Biochemistry.

DESCRIPTORS: *Acridines, *Benzene derivatives, *Cancer research, Biochemistry.

Botany

Barashkov, G. K.
THE FOOD VALUE OF DIATOMACEOUS ALGAE (Kermevaya Tsennost' Diatomovykh Vodorosiei). 30 Oct 62, 3p. Trans. A-1375.
Order from OTS or SLA $1.10 63-13026

Trans. of Priroda (USSR) 1960 [v. 49] no. 6, p. 100. Abstract trans. is available from OTS or SLA $1.10 in 62-32780, AID-62-115, 1 Aug 62 [10]p.

DESCRIPTORS: *Food, *Algae, Plants, *Marine biology, Plankton.

Komarov, V. L., ed.
FLORA OF THE U. S. S. R., 1934, VOL. 2, tr. by N. Landau. 1963, 622p. PL-480 Smi.
Order from OTS $6.50 60-21814

Trans. of Akademiya Nauk SSSR. Botanicheskii Institut. Flora S. S. S. R., 1934, v. 2 [778p.].

DESCRIPTORS: Plants, *Grasses, *Taxonomy, Distribution, Ecology, Economics, Morphology

Includes the Taxonomy, Geographical distribution, Biology, Economic importance, etc., of the Poaceae (Gramineae).

Smirnov, I. V.
THEORETICAL BASIS FOR THE PRINCIPLE OF SINGLE-CELLED ALGAE CULTIVATION. 29 Mar 63 [18]p. 3 refs. JPRS: 18432.
Order from OTS $0.50 63-21454

Trans. of #Biofizika (USSR) 1963, v. 8, no. 1, p. 90-100.

DESCRIPTORS: *Algae, Culture media.

The aim of this study is to provide the basis for a mathematical approach to the principle of cultivating chlorella, which will make possible a theoretical evaluation of the productivity of the culture under various methods of cultivation as a function of the basic factors of cultivation, both biological and design. The mathematical basis for the amount of chlorella biomass as a function of the duration of its cultivation is presented.

Medical Specialties and Equipment

Loginov, A. S. and Pushkar', Yu. T.
THE LIVER RHEOGRAM, NORMAL AND PATHOLOGICAL. [1962] [11]p. 2 refs. FASEB manuscript no. S 35-2.
Order from OTS or SLA $1.60 63-15420

Trans. of Terapevticheskii Arkhiv (USSR) 1962, v. 34, no. 3, p. 81-87.

DESCRIPTORS: *Liver, *Blood circulation, *Diagnosis, Diseases, *Medical equipment, Bioelectronics.

Liver rheograms of healthy and diseased human subjects were recorded by means of two electrodes, one measuring 6 x 10 cm and the other 3 x 4 cm. The larger electrode was attached at the level of the lower boundary of the right lung, between the vertebra and the posterior right axillary line; the smaller (active) electrode was attached at the level of the costal margin along the right midclavicular line. This positioning of the electrodes allowed the current to pass through the liver. The subject lay horizontally and was advised to hold his breath after exhaling. An electrocardiogram was taken simultaneously with the liver rheogram so that the phases of the cardiac cycle could be compared with the rheogram. The liver rheograph, since it is not a strictly specific method, can be used along with clinical and laboratory methods for diagnosing pathological processes in the liver, particularly chronic hepatitis and cirrhosis.

Mukhutdinov, I. Z.
PUBLIC HEALTH IN THE REPUBLIC OF CUBA (Zdravookhranenie v Respublike Kuba). 26 Oct 62, 10p. Trans. V-1804.
Order from OTS or SLA $1.10 63-13031

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1962, v. 33, no. 10, p. 128-131.

DESCRIPTORS: *Cuba, *Public health, Medicine, *Communicable diseases, Hospitals, Medical personnel, Vaccines, Medical facilities, Sanitary engineering, Epidemiology, Medical equipment.

Parin, V. V.
THE COSMONAUT IS FEELING FINE, SAID A SOVIET SCIENTIST. 17 Jan 63, 5p. FTD-TT-62-1602.
Order from OTS or SLA $1.10 63-15513

Unedited rough draft trans. from Literaturnaya Gazeta (USSR) 1961, 15 Aug.

DESCRIPTORS: *Space medicine, *Astronauts, Space flight.

Parin, V. V.
COSMOS, MEDICINE, MAN. 17 Jan 63, 6p. FTD-TT-62-1603.
Order from OTS or SLA $1.10 63-15512

Unedited rough draft trans. from Komsomol'skaya Pravda (USSR) 1961, 10 Mar.

DESCRIPTORS: *Space medicine, Space biology, Space flight, Space environmental conditions.

Sokolov, V. A. and Kondrat'eva, T. I.
PREPARATION OF MEDICAL APPLICATORS WITH DIFFERENT RADIOACTIVE ISOTOPES OF ION-EXCHANGE MATERIALS. [1962] [11]p. 14 refs. FASEB manuscript no. S 30-2.
Order from OTS or SLA $1.60 63-15423

Trans. of Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 1, p. 28-32.

DESCRIPTORS: Radiobiology, *Injectors (Medicine), *Radioactive isotopes, Ion exchange resins, *Medical equipment.

The method of obtaining applicators with varying emission for medical use proposed herein is based on the use of ion-exchange materials. All the operations for preparation of the applicators may easily be made automatic. Models of applicators using radioactive isotopes P^{32}, Sr^{90} Pm^{90}, and others of varying surface activity were received. The unevenness of distribution of the radioactive isotopes in the applicators, obtained on the basis of three samples of ion-exchange materials, was approximately 5%. The models of the applicators with P^{32} were successfully tested in a number of medical institutions from which recommendations were receiving mass issue of applicators for clinical use. (Author)

Tsibel', B. N.
A METHOD OF DEMONSTRATING THE BASAL MEMBRANES AND CONNECTIVE TISSUE OF THE RENAL GLOMERULUS. [1962] [7]p. 6 refs. FASEB manuscript no. S 144-2.
Order from OTS or SLA $1.10 63-19000

Trans. of Arkhiv Patologii (USSR) 1962, v. 24, no. 3, p. 77-79.

DESCRIPTORS: *Biological strains, Histological sections, Morphology, *Kidneys, *Tissues (Biology), *Membranes (Biology)

Pathology

PROBLEMS OF THE PATHOLOGIC PHYSIOLOGY OF THE INFECTIOUS PROCESS: TABLE OF CONTENTS [AND SELECTED] PASSAGES [CONCLUSIONS]
18 Mar 63 [17]p. JPRS: 18191.
Order from OTS $0.50 63-21351

Partial trans. of mono. Voprosy Patologicheskoi Fiziologii Infektsionnogo Protessa, Moscow, 1962.

DESCRIPTORS: *Pathology, *Physiology, *Infections, *Diphtheria toroid, Nervous system, Respiration, *Skeleton, Muscles, *Bacterial toxins, *Whooping cough, *Clostridium tetani, Vaccines, *Herpes, *Influenza viruses, Shock (Pathology), Arteries, *Tolerances (Physiology), Antigens, *Intestine, Conditioned reflex, Cardiovascular system, *Corynebacterium, Diseases, *Adenosine phosphates, Adrenal cortical extract, Hormones, Adrenal glands, Endocrine glands, *Tholamus, Pitiutary gland, Anaphylactic shock, Salmonella infections.

Contents:
On the action of diphtheria toxin on the central nervous regulation of respiration, by V. N. Abrosimov
Disturbances in the nervous regulation of respiration under the influence of the toxic components of pertussis bacilli, by V. N. Abrosimov
Electrophysiologic studies of the action of serum proteins and certain bacterial toxins on the receptors of the skeletal muscles, by G. A. Erzina
Electrophysics studies of the functional state of the muscle receptors in local tetanus, by G. A. Erzina
The problem of the mode of action of tetanus toxin on the spinal centers, by Yu. S. Sverdlov
The action of the herpes virus on the functional state of the sympathetic nervous system, by T. A. Alekseeva
Pathophysiologic studies of the mechanism of the toxic action of the influenza virus, by T. A. Alekseeva
On the mechanism of the changes in the pressor carotid sinus reflex in anaphylaxis, by I. S. Gushchin
On the problem of the mechanism of development of tolerance to the pyrogenic effect of certain bacterial antigens, by V. I. Pytskii
On the mechanism of different phases of the anaphylactic contraction of smooth muscles of the small intestine, by L. M. Ishimova and Nuyen Nang An
On the changes in reactivity of the organism under the influence of the toxic components of pertussis bacilli, by V. N. Aborsimov
The influence of single sensitization on the conditioned reflex activity in dogs, by V. V. Odegova
On the causes of changes in the reaction of cardiovascular system of rabbits infected with B. Typhimurium on the sympathomimetric substance, by V. N. Lazareva
On the content of adenosine triphosphoric acid, creative phosphate, and mineral phosphate on the heart, brain, and skeletal muscles of white rats in diphtheria toxicity, by L. A. Ivanova
On the changes in the course of the febrile reaction during the use of cortisone, by V. I. Pytskii
Changes in the resistance of white rats to the toxic effects of vaccine under the influence of adrenalectomy and the administration of certain hormones, by V. M. Ivanov
On the mechanism of the neuro-endocrine influences on the resistance of white rats to diphtheria toxin, by V. M. Ivanov
On the participation of the hypothalamus in the development of anaphylactoid shock in white rats, by I. S. Gushchin
The role of the adrenal-pituitary system in the anaphylactoid reaction and certain aspects of the mechanism of tachyphylaxis, by Ma Bao-li
The role of the adrenal-pituitary system in the development of anaphylaxis in white rats, by Khe Chio-tszyao.

WORKS OF THE INSTITUTE OF HIGHER NERVOUS ACTIVITY, PATHOLOGICAL SERIES, 1959, VOL. 6: PATHOPHYSIOLOGY AND EXPERIMENTAL THERAPY OF DISORDERS IN ANIMAL HIGHER NERVOUS ACTIVITY DURING SOME INTOXICATIONS AND INFECTIONS, tr. by A. Ferber and others. 1963, 300p 198 refs. PL-480 HEW.
Order from OTS $3.00 61-31023

Trans. of Akademiya Nauk SSSR. Institut Vysshei Nervnoi Deyatel'nosti. Trudy. Seriya Patofiziologicheskaya, 1959, v. 6.

DESCRIPTORS: *Pathology, Physiology, *Nervous system, Toxicity, *Infections, *Brain, Spinal cord, Streptococcus, Staphlococcus, Respiration, *Bacterial toxins, Conditioned reflex, *Anaphylactic shock, Adrenal glands, *Antigens and antibodies, *Gamma globulin, Drugs, *Antigen-antibody reactions, Diphtheria toxoid, Benzedrine sulfate, *Parasympatholytic agents, Procaine, Epinephrine, *Sleep, Penicillins, Morphology, *Tissues (Biology).

Contents:
Experimental therapy of bacterial intoxications and artificially induced infections in animals, by A. G. Ivanov-Smolenskii
Present state and potentialities of experimental studies on pathophysiology of higher CNS activity in animals, by L. I. Kotlyarevskii
Nervous mechanisms of disturbances in the activity of higher parts of the CNS in animals (white rats) after streptococcal toxin administration, by L. I. Kotlyarevskii
The effect of toxic states following the administration of staphylococcal toxin on the activity of higher parts of the CNS in dogs, by G. Ya. Guobis
Changes in the respiratory component of conditioned alimentary reflexes and in the cardiac activity of dogs in experimental staphylococcal toxic states, by G. Ya. Guobis
Development and result of anaphylactic shock elicited in sensitized guinea pigs after prolonged drug sleep, by L. E. Khozak
Anaphylactic states in intact and adrenalectomized rats by R. K. Borukaev
Changes in higher nervous activity of animals (white rats) during the period of sensitization and following administration of a reaction antigen dose, by R. K. Borukaev
Study of cortical dynamics in animals with various types of nervous system subjected to immunogenic effect of therapeutic prophylactic anti-infective serum (gamma-globulin) by L. I. Kryachko
Effect of phenamine on the activity of higher parts of the CNS of white rats in induced diphtherial toxic states, by V. E. Miklashevskii
Disturbances of higher nervous activity in dogs under the effect of toxic doses of tropacin, by R. Yu. I'lyuchenok

Changes in higher nervous activity in white rats under the effect of toxic doses of novocaine, by T. I. Kovalenko

The effect of adrenalin on disturbances in higher nervous activity of white rats caused by pasteurellosis, by A. G. Izergina

Nervous mechanisms of the effect of prolonged sleep on higher nervous activity disorders in white rats caused by experimental streptococcal intoxications, by L. I. Kotlyarevskii

The effect of prolonged therapeutic sleep on disturbances of higher nervous activity of white rats in recurrent staphylococcal intoxication, by L. S. Gorsheleva

Effect of various doses of penicillin on higher nervous activity of white rats, by U. G. Gasanov

Therapeutic effect of penicillin on disturbances in higher nervous activity of white rats caused by pneumococcal infections, by U. G. Gasanov

Study of the activity of the higher parts of the CNS of animals during penicillin therapy in an experimental streptococcal infection, by L. I. Kryachko

Drug-induced sleep therapy applied in infection of white rats with a highly virulent hemolytic streptococcus, by L. I. Kryachko

Microscopic investigation of the CNS of white rats treated with penicillin in staphylococcal intoxication, by M. M. Aleksandrovskaya

Morphological changes in the CNS in some experimental intoxications and infections, by M. M. Aleksandrovskaya

Morphological changes in the CNS and internal organs of white rats subjected to prolonged sleep therapy in cases of infection caused by a highly virulent streptococcus culture, by N. I. Artyukhina

Morphological investigation of the brain and internal organs of white rats treated with penicillin in infections caused by a highly virulent hemolytic streptococcus culture, by N. I. Artyukhina

Araviiskii, A. N. and Kashkin, P. N.
COCCIDIOICOMYCOSIS. 25 July 62 [151]p. 157 refs.
ABL Trans. 548, JPRS: R-2627-D.
Order from OTS or SLA $11.50 63-15982

Trans. of mono. [Koktsidioidnyi Mikoz] Leningrad, 1960 [123p.].

DESCRIPTORS: *Coccidioides, *Fungus infections, Etiology, Pathology, Diagnosis, Therapy, Epidemiology, Antigens and antibodies

This monograph presents the scientific and practical materials essential for the guidance of the surgeon, internist, dermatologist, mycologist, tuberculosis specialist, histopathologist, and epidemiologist in the diagnosis and treatment of coccidioidomycosis.

Gekht, B. M.
COPPER CONTENT IN THE BRAIN TISSUE IN NORMAL CONDITIONS AND IN SOME DISEASES OF THE NERVOUS SYSTEM. [1962] [9]p. 17 refs.
Order from OTS or SLA $1.10 62-20313

Trans. of #Byulleten' Eks[perimental'noi] Biologii i Meditsiny (USSR) 1961 [v. 51] no. 2, p. 49-54.

DESCRIPTORS: *Copper, *Brain, Spectroscopy, Chemical analysis, Diseases, *Nervous system, Biochemistry, *Tumors, *Hepatolenticular degeneration.

The purpose of the present studies was to determine the content of copper in functionally different parts of the nervous system in man, and the effects upon its concentration of certain diseases. (Author)

Gordon, B. G.
THE EFFECT OF CERTAIN SUBSTANCES ON THE AMMONIA CONTENT AND GLUTAMINE CONTENT IN THE BRAIN DURING DISTURBANCES OF LIVER ACTIVITY. [1962] [15]p. 8 refs.
Order from OTS or SLA $1.60 62-20360

Trans. of [Akademiya Nauk SSSR]. Institut Fiziologii. Trudy, 1962, v. 10, p. 294-302.

DESCRIPTORS: Toxicity, Inhibition, *Ammonia, *Brain, *Liver, *Carbon tetrachloride, *Poisoning, *Drugs, Glutamine, Urethanes, Procaine, Calcium compounds, Vitamin B complex, Ascorbic acid, Vitamin P.

Introduction of urethane into the system appears to have an unfavorable effect on the organism of rats during CCl_4 poisoning, reducing its power to survive. Urethane deepens the depression of the CNS aroused by the action of CCl_4; and it also depresses the protective synthesis of glutamine in the brain during the first few hours of the poisoning. Administration of vitamins (B_1, B_2, and PP) under conditions of CCl_4 poisoning facilitates the synthesis of glutamina in brain tissue. Administration of novaocaine, urethane, calcium salt, sodium glutamate, ascorbic acid, and the three vitamins used in this study, has no effect on ammonia and glutamine content in normal rats. In case of CCl_4 poisoning the administration of the above substances will not lower ammonia content in the brain, which has been raised by the introduction of the poison into the system. (Author)

Hamburger, J[ean] Richet, G[abriel] and [C]rosnier, J[ean].
TECHNICS OF MEDICAL REANIMATION AND CONTROL OF THE FLUID BALANCE IN EMERGENCY MEDICINE: TABLE OF CONTENTS [1962] 21p.
Order from SLA $2.60 62-18733

Trans. from French mono. Technics of Medical Reanimation and Control of the Fluid Balance in Emergency Medicine, n.p., 1954.

DESCRIPTORS: *Indexes, *Medicine, *Pathology, *Body fluids, Therapy, Biochemistry.

Koch, O.
PATHOLOGICAL ANATOMY OF LUNG CANCER. [1962] 27p.
Order from K-H $33.75 K-H 9915a

Trans. of [Deutsche Gesellschaft für Innere Medizin. Verhandlungen (West Germany) 1951] v. 57, p. p. 285-304.

DESCRIPTORS: *Cancer, *Lungs, Anatomy, Pathology.

Kostina, V. V.
PROTEIN SPECTRUM OF BLOOD SERUM IN CHRONIC PNEUMONIAS AND LUNG CANCER. [1962] [7]p. 13 refs. FASEB manuscript no. S 50-2.
Order from OTS or SLA $1.10 63-15417

Trans. of Terapevticheskii Arkhiv (USSR) 1962, v. 34, no. 5, p. 22-25.

DESCRIPTORS: Blood chemistry, *Blood proteins, *Spectrographic analysis, *Pneumonia, *Cancer, *Lungs, Body temperature, Albumins, Globulins, Diagnosis.

Changes in the protein spectrum of blood serum in chronic pneumonia and lung cancer are reflected in hypoalbuminemia and hyperglobulinemia. In the globulin spectrum there is a particular increase in the level of the α_2-fraction and, in a number of patients, in the γ-fraction. Total protein remains within the normal range in all patients. Antiphlogistic treatment leads to a temporary reversion to normal of the protein spectrum in chronic pneumonia and does not eliminate inflammatory changes in lung cancer. As a nonspecific reaction, alteration in the protein spectrum of blood serum is more sensitive than the ESR and reflects the individual course of the inflammatory process. (Author)

Schwartz, Daniel, Denoix, Pierre F., and Anguera, George.
RESEARCH INTO LOCATIONS OF CANCER ASSOCIATED WITH TOBACCO AND ALCOHOL IN MAN. [1962] 28p.
Order from K-H $35.00 K-H 6871 e

Trans. of Bulletin du Cancer [sic] 1957, v. 44, no. 2, p. 336-361.

DESCRIPTORS: Cancer research, *Tobacco, *Cancer, *Alcohols.

Sychev, G. G.
VALUE OF PHLEBOGRAPHY IN DIAGNOSIS OF POSTPHLEBITIC SYNDROME. [1962] [3]p. (figs. omitted). FASEB manuscript no. S 80-2.
Order from OTS or SLA $1.10 63-15411
figs. available on loan from OTS

Trans. of Vestnik Rentgenologii i Radiologii (USSR) 1962, v. 37, no. 1, p. 62-65.

DESCRIPTORS: *Phlebitis, *Diagnosis, *Thrombosis, Veins, Regeneration.

Velasco, Martha and others.
BLOOD AMMONIA (NH_4) GLUTAMIN IN THE CSF, EEG AND NEUROLOGICAL EXAMINATION IN RELATION TO THE STATES OF CONSCIOUSNESS IN PATIENTS WITH LIVER DISEASES. [1962] 4p.
Order from SLA $1.10 62-20426

Trans. of Revista Medica de Chile [1961] v. 89, no. 10, p. 767-771.

DESCRIPTORS: *Blood chemistry, *Ammonia, *Glutamine, *Cerebrospinal fluid, *Electroencephalography, *Liver, *Diseases, *Shock (Pathology), Diagnosis.

It has been concluded that the clinical picture together with the determination of the glutamine in the cerebrospinal fluid and the blood NH_4 are the factors of major usefulness in the diagnosis of the alterations of consciousness in hepatic patients. (Author)

Velasco, Marta, and others.
DETERMINATION OF GLUTAMINE IN THE C.S.F. IN THE DIAGNOSIS OF HEPATIC COMA (Determination de la Glutamina en el Liquido Cefaloraquidea en el Diagnostico del Coma Hepatico). [1962] 4p.
Order from SLA $1.10 62-20425

Trans. of Revista Medica de Chile, 1957, v. 85, no. 4, p. 193-195.

DESCRIPTORS: Diagnosis, Determination, *Glutamine, *Cerebrospinal fluid, Diagnosis, *Shock (Pathology), *Diseases, *Liver.

Determinations of glutamin in cerebrospinal fluid by the method of Whitehead and Whittaker are technically very simple. The glutamin concentration in the C.S.F. are elevated in patients with liver cirrhosis. When the liver cirrhosis is accompained by coma this elevation is the rule. It seems that the determinations of glutamine in the C.S.F. can be valuable in the differential diagnosis of coma. (Author)

Wassink, W. F.
CONDITIONS WHICH GIVE RISE TO CANCER OF THE LUNG. [1962] 26p.
Order from K-H $32.50 K-H 5398 c

Trans. from Nederlands Tijdschrift voor Geneeskunde, 1948 [v. 92] no. 46.

DESCRIPTORS: *Cancer, *Lungs, Etiology.

Werner, Wolfgang.
STATISTICAL STUDY OF CARCINOMA SECTIONS, 1920-51 (22619 SECTIONS, 4377 CARCINOMAS). [1962] 25p.
Order from K-H $31.25 K-H 10090 b

Trans. of Archiv für Geschwulstforschung (East Germany) 1953, v. 5, no. 4, p. 334-351.

DESCRIPTORS: *Cancer, *Statistical data.

Pharmacology and Toxicology

Anichkov, S. V., Zakusov, V. V. and others.
RESPIRATORY REFLEXES ARISING FROM CIRCULATION OF POISONS THROUGH VESSELS. [1962] [1]p.
Order from OTS or SLA $1.10 62-20166

Trans. of Fiziologicheskii Zhurnal SSSR, 1936, v. 21, no. 5/6, p. 809.

DESCRIPTORS: *Reflexes, *Respiration, *Poisons, Toxicity, *Blood circulation, Blood vessels, Brain.

Killian, H.
ISOPROPYL CHLORIDE: A NEW ANALGESIC. [1962] [19]p. 19 refs.
Order from SLA $1.60 62-20204

Trans. of Langenbecks Arch[iv für Klinische Chirurgie, Vereinigt mit] D[eu]tsch[e] Z[eitschrift für] Chir[urgie] (West Germany) 1953, v. 274 [no. 3] p. 225-236.

DESCRIPTORS: *Drugs, Pharmacology, *Propanes, *Chlorides, *Analgesics, Anesthetics, Toxicity.

On the basis of the experience gathered from about 30,000 light anesthesias in Germany, (isopropyl chloride) is a useful substitute for ethyl chloride, and can be considered capable of replacing "Trilene" as an analgesic. As with ethyl chloride, the excitation stage must not be exceeded, and should be avoided altogether. Because of the unavailability of precision dosage equipment and the lack of sufficient experimental and clinical experience, IPC cannot, as of now, be used for full anesthesia or for prolonged light anesthesis.

Rosenberg, A.
ATTEMPTS TO CURE SMOKERS FROM THE USE OF TOBACCO. [1962] 15p.
Order from K-H $18.75 K-H 9974 b

Trans. of The Doctor [sic] 1959, v. 121, no. 22, p. 881-886.

DESCRIPTORS: Therapy, *Smokes, Addiction, *Tobacco, Cigarettes.

Sala, G. and Ballabio, C. B.
INFLUENCE OF CERTAIN HORMONIC STEROIDS ON CALCIUM-PHOSPHORIC EXCHANGE IN RHEUMATIC DISEASE. Report presented at the Congress of the Italian Society of Rheumatology (no. 13) Naples, 16-17 Dec 59. 1961, 12p. 16 refs.
Order from SLA $1.60 61-20906

Trans. of [Reumatismo] (Italy) 1960 [v. 12] suppl. 1 [p. 367-374].

DESCRIPTORS: Drugs, Hormones, *Steroids, *Rheumatic fever, *Metabolism, *Calcium, Phosphorus Corticosteroids, Testosterone, Vitamin D, Bones, Pathology.

The rheumatoid arthritic is accompanied by osteoporosis, which usually becomes aggravated by protracted cortisone treatment. The cortisones exert a negative influence on the exchange of calcium and phosphorus through the catabolic effect at the level of the muco-protein composition of the bone. The anabolizing steroids correct this catabolic effect of the cortisones presumably restoring the protein substrate and secondarily favoring the deposition of tricalcium phosphate at the bone level. (Author)

Semba, Takehiko and Irisawa, Hiroshi.
STUDIES ON THE ACTION OF NICOTINE ON THE BLOOD PRESSURE. [1962] 24p.
Order from K-H $30.00 K-H 9353 e

Trans. of [Nihon Seirigaku Zasshi] (Japan) 1951, v. 13, p. 203-210.

DESCRIPTORS: Pharmacology, *Nicotine, *Blood pressure.

Usbekova, D. G.
THE EFFECT OF GLUTAMIC ACID AND COFFEIN UPON GLUTAMINE, GLUTAMIC ACID, AMMONIA, AND ADENOSINE TRIPHOSPHATE CONTENT IN CEREBRAL HEMISPHERES. [1962] [5]p. 15 refs.
Order from OTS or SLA $1.10 62-20328

Trans. of Voprosy Meditsinskoi Khimii (USSR) 1962, v. 8, [no. 1] p. 83-86.

DESCRIPTORS: *Glutamic acid, *Caffeine, *Ammonia, *Adenosine phosphates, *Brain, Metabolism, Drugs, Biochemistry,

The adminsitration - over a six-day period of glutamic acid (100 mg/100 g body weight/day) - in no way effects the content of ammonia, glutamic acid, glutamine, and adenosine triphosphate in the cerebral hemispheres. At the same time, considerable variation in the content of these compounds may be affected through the administration of glutamic acid with various amounts of coffein. (Author)

Vincent, D., Segouzac, G., and Bouaziz, A.
RESEARCHES ON THE PHARMACOLOGICAL ACTION OF ANTIASTHMATIC CIGARETTES CONTAINING BELLADONNA, HENBANE AND STRAMONIUM. [1962] 17p.
Order from K-H $21.25 K-H-5604-b

Trans. of Annales Pharmaceutiques Françaises, 1954, v. 12, no. 7/8, p. 509-518.

DESCRIPTORS: *Cigarettes, *Drugs, Tobacco, *Asthma, Inhibition, Belladonna alkaloids, Tropane alkaloids, Alkaloids

Volkova, A. A.
NERVOUS REGULATION OF THE BROMINE LEVEL OF THE BLOOD AT VARIOUS STAGES OF RHEUMATISM IN CHILDREN. [1962] [23]p. 23 refs. FASEB manuscript no. S 21-2.
Order from OTS or SLA $2.60 63-15424

Trans. of #Zhurnal Vysshei Nervnoi Deyatel'nosti (USSR) 1962, v. 12, no. 1, p. 74-81.

DESCRIPTORS: *Drugs, *Bromides, *Rheumatic fever, Nervous system, Blood chemistry, Dosage, *Children.

Simultaneous investigation of the bromine level of the blood and the nature of cortical-subcortical relations in rehumatic children reveals that bromine salts play a definite part in mobilizing their defense mechanisms. The bromine content of the blood is regulated by the level of cortical-subcortical relations and changes with the degree of excitability of the subcortical divisions of the CNS. In prescribing bromine salts as part of a comprehensive treatment, it is necessary to increase the "age" dose of the preparation gradually, depending

on the extent to which excitability of the cells in the CNS deviates from their optimal level. The use of bromine is inadvisable for patients in an advanced stage of the disease. In individualizing bromine preparations, it is important to be guided both by the bromine level of the blood, since it drops in wavelike fashion, and by the nature of the cortical-subcortical relations in the CNS of the patients. (Author)

Wyszynska, Halina.
CARCINOGENIC SUBSTANCES IN THE POLLUTED ATMOSPHERE. [1962] 16p.
Order from K-H $20.00 K-H 11279b

Trans. of [Panstwowy Zaklad Higieny. Roczniki] (Poland) 1960, v. 11, no. 6 [p. 541-550].

DESCRIPTORS: *Cancer, Particles, *Atmospheric pollution.

Radiobiology

GREAT MEDICAL ENCYCLOPEDIA [1962] VOL. 27: SELECTED ARTICLES. 28 Mar 63 [86]p. 84 refs. JPRS: 18414.
Order from OTS $2.25 63-21446

Trans. of Bol'shaya Meditsinskaya Entsiklopediya (USSR) [1962] v. 27, cols. 699-721, 770-824.

DESCRIPTORS: *Medicine, *Radiation effects, Genetics, *Health physics, *Radiation injuries, Radiobiology, *Radioactive isotopes, *Radar, *Radiometers.

Contents:
Radiation genetics, by N. P. Dubinin
Radiation hygiene, by A. Marei
Radiation conditions, by Yu. Sebrant
Radiation injuries in combat, by G. Stepanskii
Radiobiology, by V. Troitskii and Z. Pershina
Radioisotopic diagnosis, by D. Grodzenskii
Radioisotope laboratory, by V. Khrushchev
Radiological units, by M. Domshlak
Medical radiology, by M. Domshlak and I. Ivanov
Radar
Clinical radiometer, by K. Kalugin
Radiometric instruments, by D. Osanov.

Dubinin, N.P., Kerkis, Yu. Ya., and Lebedeva, L. I.
THE EFFECT OF SMALL RADIATION DOSES ON CHROMOSOME REARRANGEMENTS DURING THE IRRADIATION OF CELLS IN HUMAN EMBRYONIC TISSUE CULTURES. [1962] 11p. 18 refs.
Order from OTS or SLA $1.60 AEC-tr-4817

Trans. of mono. [Effekt Malyukh Doz Radiatsii na Khromosomnye Perestroiki pri Obluchenii Kletok v Kul'turakh Embrional'nykh Tkanei Cheloveka, AN SSSR, 1960, 14p.].

DESCRIPTORS: *Radiation effects, *Chromosomes, *Tissues (Biology), Cells (Biology), Culture media, *Mutations, Mammals, *Genetics.

Pradel, J.
PRACTICAL ASPECTS OF PROTECTION AGAINST RADIATION IN LABORATORIES USING RADIOELEMENTS, tr. by P. J. Robinson. 1960 [18]p. DEG Information Series 6 (W); DSIR NLL M 2339.
Order from OTS or SLA $1.60 62-32404

Trans. of Énergie Nucléaire (France) 1959, v. 1, p. 77-84.

DESCRIPTORS: *Radiological physics, Inhibition, Radiation effects, Radiation hazards, *Radiochemical laboratories, *Radiological contamination, Monitors, Radiation tolerance.

Zoology

WORKS OF THE ALL-UNION HYDROBIOLOGICAL SOCIETY, 1962, VOL. 12: SELECTED ARTICLES. 13 Mar 63 [29]p. 37 refs. JPRS: 18115.
Order from OTS $0.75 63-21314

Trans. of Vsesoyuznoe Gidrobiologicheskoe Obshchestvo. Trudy (USSR) 1962, v. 12, p. 235-244 and 400-409.

DESCRIPTORS: *Marine biology, Rivers, Dams, *Fishes, *Herring, Feeding, *Plankton, *Crustacea, Adaptation (Physiology), Transportation, *Ecology, *Barents Sea.

Contents:
Feeding of herring larvae in the lower Volga before and after the construction of the Volgograd Dam, by R. P. Matveeva (the main theses in this work were pub. in mono.
Annotatsii k Rabotam, Vypolnennym Kasp NIRO v 1959 G, 3d collection, Astrakhan', 1961, p. 31-32)
The problem of acclimatization of commercial crabs to the Barents Sea, by Yu. I. Orlov.

Cherfas, B. I., Berdichevskii, L. S., and Isaev, A. I.
PROSPECTS OF FISHERY DEVELOPMENT IN INTERNAL RESERVOIRS OF THE SOVIET UNION (Perspektivy Razvitiya Rybnogo Khozyaistva na Vnutrennikh Vodoemakh Sovetskogo Soyuza). 11 Dec 62, 13p. Trans. A-1383.
Order from OTS or SLA $1.60 63-13590

Trans. of Akademiya Nauk [SSSR]. Izvestiya. Seriya Biologicheskaya, 1961 [v. 26] no. 6, p. 926-930.

DESCRIPTORS: *Fishes, *Fisheries, Reproduction (Physiology), Contamination, Economics, *Food.

Ognev, S. I.
MAMMALS OF U.S.S.R. AND ADJACENT COUNTRIES: MAMMALS OF EASTERN EUROPE AND NORTHERN ASIA, VOL. 5: RODENTS, tr. by A. Birron and Z. S. Cole. 1963, 662p. PL-480 Smi.
Order from OTS $6.75 61-31219

Trans. of mono. Zveri SSSR i Prilezhashchikh Stran. Zveri Vostochnoi Evropy i Severnoi Azii, v. 5: Gryzuny, Moscow/Leningrad, 1947.
A partial trans. (p. 185-216) is available from OTS or SLA $7.70 as 61-27975, 7 Aug 52, 73p.

DESCRIPTORS: *Mammals, *Rodents, *Taxonomy, Ecology, Distribution, Anatomy, Physiology, Squirrels, Rats, Mice.

This book is a continuation of the description of the order Rodentia (Glires), and includes data on susliks (ground squirrels), marmots, beavers, dormice, mole rats and zokors.

CHEMISTRY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 102 (CHEMISTRY SERIES). 13 Mar 63 [20]p. JPRS: 18117.
Order from OTS $0.50 63-21316

Consists of abstracts of articles from the scientific and technical journals of Czechoslovakia and Poland.

DESCRIPTORS: *Abstracts, Bibliography, Chemistry, *Chemical analysis, *Biochemistry, Conferences, *Physical chemistry, Organic compounds, Alkaloids.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 118 (CHEMISTRY SERIES). 28 Mar 63 [23]p. JPRS: 18417.
Order from OTS $0.75 63-21449

Consists of abstracts of articles from the scientific and technical journals of Poland and Yugoslavia.

DESCRIPTORS: *Abstracts, Chemistry, *Alkaloids, *Chemical analysis, Molecular structure, *Physical chemistry, Inorganic substances, *Complex compounds, *Biochemistry, *Electrochemistry, Catalysis.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 127 (CHEMISTRY SERIES). 3 Apr 63 [13]p. JPRS: 18527.
Order from OTS $0.50 63-21494

Consists of abstracts of articles from the scientific and technical journals of Czechoslovakia and Rumania.

DESCRIPTORS: *Abstracts, Literature, *Czechoslovakia, *Rumania, *Chemistry, Chemical analysis, Pyridines, Coenzymes, Vitamines, Proteins, Metals, Plastics

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 47 (CHEMISTRY SERIES). 13 May 63 [104]p. JPRS: 18089.
Order from OTS $2.50 63-21307

Trans. of selected abstracts from Referativnyi Zhurnal. Khimiya (USSR) 1962, nos. 2-5 and 15-18.

DESCRIPTORS: *Abstracts, Bibliography, *Chemistry, *China, *Physical chemistry, *Complex compounds, Inorganic substances, *Geochemistry, Organic compounds, *Chemical engineering, *Fuels, Polymers, *Plastics, *Rubber, *Food.

HERALD OF THE ACADEMY OF SCIENCES USSR, 1963 [VOL. 33] NO. 1: SELECTED ARTICLES. 2 Apr 63 [21]p. 3 refs. JPRS: 18488.
Order from OTS $0.50 63-21472

Trans. of Akademiya Nauk SSSR. Vestnik, 1963 [v. 33] no. 1, p. 11-15, 32-37, 42-44.

DESCRIPTORS: *Radiochemistry, Radioactive isotopes, *Chemical engineering, *Insect control, Insecticides, Agriculture.

Contents:
Certain new problems of radiochemistry, by V. I. Spitsyn
Basic tasks of modern chemical technology, by N. M. Zhavoronkov
Valuable preparations against pests of agriculture, by G. M. Vinokurova.

Herman, D. F. and Weil, R. M.
ORGANOMETALLIC COMPOUNDS AND THEIR SYNTHESIS. 16 Apr 57, 4p.
Order from OTS or SLA $1.10 62-14377

Trans. of Belgian patent [550, 573, 15 Sep 56] appl. USA, 25 Aug 55, by Société Belge du Titane.

DESCRIPTORS: *Metalorganic compounds, Synthesis, *Titanium compounds, *Zirconium compounds, *Pentadienes, Chlorides, Bromides, Amines.

The invention pertains to a process for the preparation of organometallic compounds of the metals of group IVb of the periodic table of elements, characterized in that one reacts and organic compound, chosen from a group made up of cyclopentadiene and substituted cyclopentadienes, with a compound of a metal of the fourth groups, capable of being represented by the formula $(RO)_{4-n}MeX_n$, in which R represents an aliphatic radical which contains up to 18 carbon atoms, Me is a metal of the fourth group, X a halogen atom, and n includes between 1 and 3 in the presence of a basic condensation agent. (Author)

Huisgen, Rolf.
RECENT CONTRIBUTIONS TO THE CHEMISTRY OF MEDIUM-SIZED RINGS (1). [1962] 79p.
Order from K-H $98.75 K-H 6360 a

Trans. of Angew[andte] Chemie (West Germany) 1957, v. 69, 7 June, p. 341-359.

DESCRIPTORS: Chemistry, *Atomic structure.

Analytical Chemistry

Asmaev, P. G. and Nikolaeva, L. A.
PROCEDURE FOR DETERMINING THE TECHNOLOGICAL PROPERTIES OF TOBACCO RAW MATERIAL. [1962].
Order from K-H $8.75 K-H 10789

Trans. of Tabak (USSR) 1960, v. 21, no. 1, p. 40-42.

DESCRIPTORS: *Tobacco, Chemical analysis.

Bobranski, B.
NEW AUTOMATIC EQUIPMENT FOR THE CENTRIGRAM DETERMINATION OF CARBON AND HYDROGEN IN ORGANIC SUBSTANCES. [1962] 13p.
Order from K-H $16.25 K-H 6048a

Trans. of Microchim[ica] Acta (Austria) 1956, no. 11, p. 1735-1746.

DESCRIPTORS: Automation, Chemical analysis, Micro analysis, *Carbon, *Hydrogen, *Organic materials, *Laboratory equipment

Borchert, O.
COMPLEXOMETRIC DEVELOPMENT OF IRON, CALCIUM, ZINC AND PHOSPHORIC ACID IN PHOSPHATING BATHS. [1962] 7p.
Order from K-H $8.75 K-H 6912 a

Trans. of Chem[ische] Techn[ik] (East Germany) 1957 v. 9, no. 7, p. 419-420.

DESCRIPTORS: Chemical analysis, *Iron, *Calcium, *Zinc, *Phosphoric acids, Phosphates.

Borok, M. T.
METHODS OF CALIBRATING GAS ANALYZERS FOR DETERMINING MICROCONCENTRATIONS. [1961] [10]p. (3 figs. omitted) 11 refs. AERDL T-1082; RIS E-713.
Order from OTS or SLA $1.10 62-13279

Trans. of #Priborostroenie (USSR) 1960, no. 4, p. 23-26.
Also available from RIS $20.00 as RIS E-713.

DESCRIPTORS: *Gas analysis, Test equipment, Calibration, Gas cylinders, Flowmeters, Cryostats.

Bykov, E.
A RAPID-DRIPPING POLAROGRAPHIC CAPILLARY. [1962] [1]p.
Order from OTS or SLA $1.10 62-18640

Trans. from #Zavod[skaya] Labor[atoriya] (USSR) 1962, v. 28, no. 2, p. 249.

DESCRIPTORS: *Polarographic analysis, Laboratory equipment, *Capillary tubes.

To prepare a rapid-dripping capillary we recommend introducing the tip of a fine steel needle into the orifice of an ordinary thick-walled polarographic capillary. When the needle or the capillary is rotated around their common axis the glass of the capillary orifice becomes colored, with the formation of a small hollow, almost indistinguishable to the naked eye, which protects the mercury drop against the motion of the solution. The short dripping period of such capillaries is apparently due to the unequal distribution of the weight of the drop over the perimeter of the aperture, and to the contact between the growing drop and the glass surfaces which bound the hollow. The appearance of micro-fissures around the orifice of the capillary is not impossible. It is extremely easy to prepare capillaries with a dripping frequency of 10-40 drops per second. (Report quoted in its entirely)

Dahmen, E. A. M. F. and Laarse, J. D. van der.
ANALYSIS OF PRODUCTS CONTAINING CYCLOPENTADIENE WITH PARTICULAR EMPHASIS ON GAS CHROMATOGRAPHY. [1962] 15p. 10 refs.
Order from SLA $1.60 62-20451

Trans. of Zeit[schrift für] Anal[ytische] Chem[ie] (West Germany) 1958, v. 164, p. 37-48.

DESCRIPTORS: *Cyclopentadiene, Chromatographic analysis, Spectrum analyzers, Molecular isomerism, Coal, Hydrocarbons, *Gas chromatography, Impurities, Synthesis (Chemistry).

Dianov-Klokov, V. I.
SPECTROSCOPIC DETERMINATION OF SMALL AMOUNT OF NITROGEN IN GASEOUS ARGON. [1962] [7]p. 6 refs.
Order from OTS or SLA $1.10 62-20100

Trans. of Zavodskaya Lab[oratoriya] (USSR) 1956, v. 22, p. 444-447.
Another trans. is available from ATS as RJ632.

DESCRIPTORS: *Argon, Gases, *Nitrogen, Spectographic analysis, Gas analysis.

The equipment permits the determination of C_{N_2} from 0.01 to 0.5% to 1% with an accuracy of 10% to 20% from the measured quantities. The time of one analysis is 1 to 2 minutes; the gas consumption is 1 to 2 liters (at 1 atm.)

Dubovenko, L. I.
A STUDY OF OXALATES OF INDIUM. [1962] 9p. 5 refs.
Order from OTS or SLA $1.10 63-10738

Trans. of Ukr[ainskii] Khim[icheskii] Zhur[nal] (USSR) 1962, v. 28, p. 682-687.

DESCRIPTORS: *Oxalates, *Indium, Metals, *Indium compounds, Dissociation, Density, Displacement reactions, Complex compounds.

It was established, by methods of isomolar series, and of displacement of equilibrium in an acid enviroment, with a pH < 4, in a system of indium ion - oxalate ion, the monooxalic complex of indium In C_2O_4 forms. Its dissociation constant determined by measuring light absorption in the ultraviolet is equal to $4.9 \cdot 10^{-7}$. Investigating equilibrium with rhodanide of oxalic complexes of iron, a close value was obtained. The stepped dissociation constants of dioxalic and trioxalic complex ions were computed. They are respectively equal to : $K_2 = 5.92 \cdot 10^{-5}$; $K_3 = 7.31 \cdot 10^{-2}$. Complete dissociation constant of the coordination saturated complex ion In $(C_2O_4)_3^{3-}$ is equal to $2.12 \cdot 10^{-12}$. (Author)

Farina, M., Donati, M., and Ragazzini, M.
POTENTIOMETRIC ANALYSIS OF ALUMINUM ALKYL COMPOUNDS. [1962] 11p.
Order from K-H $13.75 K-H 8549

Trans. of Ann[ali di] Chim[ica] (Italy) 1958, v. 48, [no. 6/7] p. 501-509.
Another trans. is available from SLA mi$2.40, ph$3.30 as 60-14148 [1959] [12]p.

DESCRIPTORS: *Aluminum compounds, Organic compounds, Chemical analysis, *Alkyl radicals,

For abstract see Technical Translations 3: 559, 1960.

Getskin, L. S., Yatsuk, V. V., and Savraev, V. P.
SEPARATION OF ELEMENTAL SELENIUM AND OF SELENIUM DIOXIDE FROM GASES BY THE METHOD OF CONDENSATION. [1962] 5p. 2 refs.
Order from OTS or SLA $1.10 63-10237

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1961, v. 34, no. 12, p. 2609-2613.

DESCRIPTORS: *Material separation, *Selenium, *Selenium compounds, *Oxides, Gases, Condensation, Temperature, Gas flow, Radioactive isotopes.

A sufficiently complete condensation of elemental selenium is reached at temperatures around 200 C for gas flow rates of 0.08 and 0.33 m/sec., and around 150 C for that of 0.7 m./sec.; at same starting concentration, selenium dioxide is completely condensed at temperatures around 100 C at gas flow rates of 0.08 and 0.33 m./sec. and around 80 C at that of 0.7 0.7m./ sec. With the initial concentration of 0.1 g./ n m^3, condensation of 97.2% occurs 50 C. This temperature is a guarantee likewise for the complete condensation of elemental selenium at small concentrations in the gaseous phase. For complete selenium dioxide condensation from gases, it is necessary to have, under otherwise equal conditions, a temperature almost 100 C smaller than in condensation of elemental selenium. The found data can be utilized for the solution of practical problems on condensation and trapping of selenium and of its dioxide from gases. (Author)

Hein, Fr. and Fischer, K. W.
CHROMATOGRAPHIC INVESTIGATIONS ON ORGANOCHROMIUM COMPOUNDS. [1962] 15p.
Order from K-H $18.75 K-H 6094 b

Trans. of Z[eitschrift] fur Anorg[anische] Chemie (East Germany) 1957, v. 288, p. 279-287.

DESCRIPTORS: *Chromatographic analysis, *Metalorganic compounds, *Chromium compounds.

Herrmann, Karl.
THE PHENOLIC CONSTITUENTS OF TOBACCO. July 62 [9]p. 56 refs.
Order from SLA $1.10 62-20170

Trans. of Deutsche Apotheker-Zeitung (West Germany) 1961, v. 101, no. 46, p. 1481-1482.

DESCRIPTORS: *Tobacco, Chemical analysis, *Phenols.

A literature survey.

Horacek, J., Pechanec, V., and Körbl, J.
DETERMINATION OF CARBON AND HYDROGEN IN ORGANIC COMPOUNDS. III. THE EFFECTIVENESS OF COMBUSTION CATALYSTS IN THE COMBUSTION OF CARBON MONOXIDE, HEPTANE AND BENZENE. 10 Sep 62, 9p. 9 refs.
Order from SLA $1.10 63-10103

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1962, v. 27, p. 1254-1260.

DESCRIPTORS: Determination, *Carbon, *Hydrogen, *Organic compounds, *Combustion, *Catalysts, *Carbon compounds, *Monoxides, *Heptanes, *Benzenes.

The oxidative effectiveness of a number of combustion catalysts used for C & H determination in elemental analysis has been tested. CO, heptane, and benzene were used as test compounds, and the lowest temperature was determined at which combustion of the test compounds to CO_2 and H_2O is still quantitative. The most effective catalysts, based on the effectiveness determined in this way, were selected. (Author)

Horacek, J. and Körbl, J.
MICRO- AND SEMIMICRODETERMINATION OF CARBON AND HYDROGEN IN FLUORINE-CONTAINING ORGANIC COMPOUNDS. Pt. 8 of Analytical Applications of Silver Permanganate. 27 Aug 62 [7]p. 15 refs.
Order from SLA $1.10 62-18993

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1959, v. 24, p. 286-290.

DESCRIPTORS: *Silver compounds, *Permanganates, *Fluorocarbons, Microanalysis, *Fluorine compounds, Organic compounds, *Carbon, *Hydrogen.

(See also 62-18991)

Horacek, J. and Pechanec, V.
USE OF THE MANOMETRIC METHOD IN ORGANIC ANALYSIS. II. MICRODETERMINATION OF DOUBLE BONDS BY CATALYTIC HYDROGENATION. 6 Aug 62 [6]p. 10 refs.
Order from SLA $1.10 62-18996

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1962, v. 27, p. 1500-1503.

DESCRIPTORS: *Manometers, Organic compounds, *Chemical bonds, Microanalysis, *Catalysis, *Hydrogenation.

(See also 62-16071)

Kazarnovskii, I. A. and Neiding, A. B.
STUDY OF THE DECOMPOSITION MECHANISM OF HYDROGEN PEROXIDE IN CERTAIN SOLID PERHYDRATES. [1962] 7p. (figs. tables omitted) 11 refs.
Order from OTS or SLA $1.10 63-10580

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 86, no. 4, p. 717-720.

DESCRIPTORS: Decomposition, *Hydrogen peroxide, *Hydrates, Ionization, Chemical reactions, Oxidation, *Peroxides.

Kochetova, O. I., and Ershov, P. N.
METHOD OF SEPARATION OF ANTHRAQUINONE -α 1 α 1 - DISULFONIC ACIDS FROM SULFONATION SUBSTANCES, tr. by L. H. 11 Dec 62, 3p.
Order from OTS or SLA $1.10 63-13757

Trans. of USSR author's certificate 119,876, cl. 12c, 23/01, app. 7 Aug 58 (pub. in #Byulleten' Izobretenii (USSR) 1959, no. 10.

DESCRIPTORS: Separation, *Anthraquinone, *Sulfonic acids, *Sulfonation, Mercury compounds, Sodium compounds.

A method of separation of anthraquinone -α 1 α 1 - disulfonic acids from sulfonation substances obtained by sulfonating anthraquinone with oleum in the presence of mercury or its compounds, described. For the purpose of liberating the final product from mercury compounds, sodium chloride or chlorosulfonic acid is added to the reaction substance after the completion of the sulfonation process. The anthraquinone -α 1 α 1 - disulfonic acid is removed by known procedure. (Author)

Körbl, J.
OPEN ABSORPTION TUBES FOR THE SEMIMICRO-DETERMINATION OF CARBON AND HYDROGEN. 17 July 62 [4]p. 8 refs.
Order from SLA $1.10 62-18986

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1955, v. 20, p. 993-995.

DESCRIPTORS: *Hydrogen, *Carbon, Microanalysis, Laboratory equipment, Absorption.

Luskina, B. M., Terent'ev, A. P. and Syavtsillo, S. V.
SIMULTANEOUS DETERMINATION OF PHOSPHORUS AND SILICON IN ORGANIC COMPOUNDS. Pt. 6 of Elemental Organic Analysis by the "Wet Combusion" Method. 24 Oct 62, 6p. 4 refs.
Order from OTS or SLA $1.10 63-10105

Trans. of Zhur[nal] Anal[iticheskoi] Khim[ii] (USSR) 1962, v. 17, no. 5, p. 639-641.

DESCRIPTORS: *Chemical analysis, *Phosphorus, *Silicon, *Organic compounds, Heat, Chemical precipitation, Decomposition, Spectrographic analysis, Volumetric analysis.

A method has been developed for the simultaneous determination of silicon and phosphorus in organic compounds, based on mineralization of the sample with potassium persulfate or perhydrol in concentrated sulfuric acid on heating. Silicon is precipitated and is then determined titrimetrically. The phosphorus in the filtrate after removal of the silicon is determined photometrically in the form of the blue complex of ammonium phosphomolybdate. The determination takes two hours. (Author) (See also 62-18026)

Mazor, Ladislaus.
DIRECT DETERMINATION OF OXYGEN IN FLUORINE-CONTAINING ORGANIC COMPOUNDS. [1962] [5]p. 6 refs.
Order from SLA $1.10 62-20074

Trans. of Mikrochimica Acta (Austria) 1956, no. 12, p. 1757-1761.

DESCRIPTORS: Determination, *Oxygen, *Fluorides, *Organic compounds, Magnesium compounds, Quartz, Pyrolysis, Refractory materials.

The determination of oxygen in organic compounds containing fluorine cannot be carried out by the usual procedure because the hydrogen fluoride resulting from the thermal decomposition of the sample reacts with the quartz, whose oxygen leads to the formation of carbon monoxide with the result that the values obtained are too high. This interference can be avoided by introducing a layer of magnesium nitride into the combustion tube. The fluorine is thus bound in the form of a refractory compound. (Author)

Motiu, T.
THE HUMIDITY DETERMINATION OF TOBACCO BY MEANS OF INFRARED RADIATIONS. [1962] 8p.
Order from K-H $5.00 K-H 11816

Trans. of Industria Alimentara [Produse Vegetale] (Rumania) 1960 [v. 11] p. 282-284.

DESCRIPTORS: *Humidity, Determination, *Tobacco, *Infrared radiation.

Nemeth, Laszlo.
CLASSIFICATION OF CIGARETTE TOBACCOS AND TOBACCO PRODUCTS ON THE BASIS OF SMOKE ANALYSIS. [1962].
Order from K-H $15.00 K-H 10897b

Trans. from Dohanyipar (Hungary) 1959 [v. 1] no. 7.

DESCRIPTORS: *Cigarettes, *Tobacco, *Smokes, Classification, Chemical analysis.

Ogata, A. and Hirano, S.
REDUCTION OF ALDEHYDE OR KETONE-NITROUS ACID MIXTURES. I. A NEW METHOD TO PREPARE ACETOXIME AND HYDROXYLAMINE HYDROCHLORIDE. [1962] 9p.
Order from SLA $1.10 62-18805

Trans. of Yakugaku Zasshi (Japan) 1930, v. 50, p. 555-559.

DESCRIPTORS: *Oximes, Acetones, *Amines, *Hydroxides, Chlorides, Preparation, Nitrogen compounds, Acids, *Aldehydes, *Ketones

Popper, A., Ionescu, A. and others.
EXPERIMENTAL INVESTIGATIONS ON SOME INDIGENOUS TOBACCO. [1962] 7p.
Order from K-H $8.75 K-H 11249b

Trans. of Ind[ustria] Aliment[ara] Produse Vegetale (Rumania) 1960, v. 11, p. 328-330.

DESCRIPTORS: *Tobacco, *Chemical analysis.

Pribil, Rudolf.
COMPLEXOMETRIC TITRATIONS (CHELATOMETRY). V. SCREENING OF ALUMINUM AND IRON DURING TITRATIONS ON ERIOCHROMBLACK T (Komplexometricke Titrace (Chelatometrie). V. Stineni Hliniku a Zeleza pri Titracich na Eriochromcern T). [1961] 13p. (foreign text included) 7 refs.
Order from SLA $1.60 61-20251

Trans. in manuscript of Chem[icke] Listy (Czechoslovakia) 1954, v. 48, p. 383-385.

DESCRIPTORS: *Complex compounds, *Titration, Amines, Ethyl radicals, *Reagents, Iron, Aluminum, Zinc, Cadmium, Manganese, Magnesium, Determination, Chemical indicators.

Pyshkin, N. I. and Lukin, O. M.
SPOT REACTIONS FOR COPPER, MERCURY, AND LEAD SALTS. [1962] 3p.
Order from OTS or SLA $1.10 AEC-tr-5468

Trans. of Zhurnal Analiticheskoi Khimii (USSR) 1950, v. 5, p. 319-320.

DESCRIPTORS: *Copper compounds, *Mercury compounds, *Lead compounds, Salts, Colorimetry, Chemical indicators.

Reactions are proposed for copper, mercury, and lead salts, based on the use of aniline, aluminon, white streptocide, and quinalizarin.

Richter, F.
PHOTOMETRIC DETERMINATION OF ALUMINUM WITH ERIOCHROMCYANIN-R, PT. 1. [1961] [37]p. (54 figs. omitted) 10 refs.
Order from SLA $3.60 62-10127

Trans. of Z[eitschrift für] Anal[ytische] Chem[ie] (Germany) 1944, v. 126, p. 426-452.

DESCRIPTORS: *Aluminum, Determination, Photometers, *Reagents, Dyes, Aging, Hydrogen ion concentration, Chemical indicators, Cyanines.

Runge, H.
THE GAS-CHROMATOGRAPHIC ANALYSIS OF INORGANIC GASES. 28 Aug 62 [17]p. 14 refs.
Order from SLA $1.60 62-18999

Trans. of Z[eitschrift für] Anal[ytische] Chem[ie] (West Germany) 1962, v. 189, p. 111-124.

DESCRIPTORS: *Gas chromatography, *Laboratory equipment, Design, Plastic tubing, Inorganic substances, *Corrosive gases, Chemical analysis, Chromatographic analysis

The special points to be considered in designing a gas chromatograph for the analysis of inorganic and corrosive gases are presented. The practical construction of a laboratory instrument and a process instrument is then described. These are used for the analysis of gas mixtures that can contain HCl, Cl_2, $COCl_2$, NOCl, ClCN, $(CN)_2$, HCN, and others. (Author)

Satava, V. and Körbl, J.
THE THERMAL DECOMPOSITION OF SILVER PERMANGANATE. Pt. 7 of Analytical Applications of Silver Permanganate. 23 Aug 62 [16]p. 26 refs.
Order from SLA $1.60 62-18991

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1957 v. 22, p. 1380-1389.

DESCRIPTORS: *Silver compounds, *Permanganates, Pyrolysis, Calorimetry, Gravimetric analysis, Electrical conductance, Thermoelectricity, Catalysis.

The decomposition of silver permanganate at temperatures up to 1000°C was followed by differential thermal analysis, thermogravimetric analysis, contraction thermal analysis, and measurements of electrical conductivity and thermoelectric properties. On the basis of the experimental results obtained, a representation of the decomposition processes and of the oxidative catalytic properties of the decomposition product of silver permanganate is given. (Author) (See also 62-18990)

Schliessmann, Otto.
SPECTROSCOPIC DETERMINATION OF NIOBIUM AND TANTALUM IN HIGHLY ALLOYED IRON AND STEEL SAMPLES (Zur Spektralanalytischen Bestimmung von Niob und Tantal in Hochlegierten Eisen- und Stahlproben). [1962] 7p. (figs. tables omitted) 14 refs.
Order from SLA $1.10 62-18664

Trans. of Spectrochimica Acta (Gt. Brit.) 1939, v. 1, no. 3, p. 239-248.

DESCRIPTORS: *Niobium, *Tantalum, Determination, *Iron alloys, *Steel, Spectrographic analysis.

Schoedler, C.
THE AUTOMATIC ANALYSIS OF BLAST FURNACE TOP GAS BY GAS CHROMATOGRAPHY. Feb 63.
Order from BISI 24 BISI-3112

Trans. of Chimie et Industrie (France) 1962, v. 87 [no. 2] p. 231-239.

DESCRIPTORS: Automatic, *Gas analysis, Chromatographic anaylsis, *Blast Furnaces, *Gas chromatography, Carbon compounds, Hydrogen.

Shmeleva, V. A. and others.
THE LEACHING OF EPOXY COATINGS BY WINE IN STORAGE CONTAINERS. 27 Feb 63, 1000 words, 9 refs.
Order from TTIS $9.00 TTIS-4027

Trans. of Lakokrasochnye Materialy i Ikh Primenenie (USSR) 1962, no. 5, p. 50-52.

DESCRIPTORS: *Epoxides, *Coatings, *Wines, Storage, *Containers.

Vecera, M. and Synek, L.
QUANTITATIVE ORGANIC ANALYSIS. XVIII. MICRODETERMINATION OF CARBON AND HYDROGEN, USING COBALTO-COBALTIC OXIDE AS COMBUSTION CATALYST. 1 Nov 62, 16p. 44 refs.
Order from SLA $1.60 63-10102

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1958, v. 23, p. 1202-1211.

DESCRIPTORS: *Quantitative analysis, *Organic compounds, *Microanalysis, *Carbon, *Hydrogen, *Cobalt compounds, *Combustion, Catalysts, *Oxides.

A rapid and simple method for the microdetermination of C & H is described, in which the sample is burned in an oxygen stream in the presence of CO_3O_4. Halogen and sulfur are absorbed by silver, while nitrogen oxides are retained outside the combustion tube by active MnO_2. The general applicability of this method was confirmed by the analysis of difficultly combustible compounds. (Author) (See also 62-18034)

Vigderhaus, M. S., Holbert, K. A. and others
GAS PARTITION CHROMATOGRAPHY OF ISOBUTANE OXIDATION PRODUCTS. [1962] 11p. (figs. omitted) refs.
Order from OTS or SLA $1.60 63-10665

Trans. of Neftekhimiya (USSR) 1962, v. 2, no. 3, p. 410-414.

DESCRIPTORS: Chemical analysis, Liquids, Oxidation, Hydrocarbons, *Hydrogen peroxide, *Chromatographic analysis, *Gas chromatography, *Butanes, Polymerization.

Analysis techniques of oxidation products of isobutane that is reduced to hydrogen peroxide were developed. Analysis of raw material and residual gas formed in oxidation process were developed. (Author)

Inorganic Chemistry

JOURNAL OF INORGANIC CHEMISTRY, 1956, VOL. 1, NO. 11. 1962, 232p. 294 refs. PL-480 AEC.
Order from OTS $3.75 AEC-tr-4592

Trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1956, v. 1, no. 11, p. 2433-[2646].

DESCRIPTORS: *Thermochemistry, *Aluminum compounds, *Lithium compounds, Organic solvents, *Complex compounds, *Cobalt compounds, Acids, Halides, *Anilines, Aniline derivatives, *Copper compounds, Salts, *Platinum compounds, *Tungstates, *Glutaric acids, *Thiocyanates, *Potassium compounds, Cadmium compounds, *Lead compounds, Chlorides, *Sodium compounds, *Acetates, *Cerium compounds, Dioxides, *Alkaline earth oxides, Sulfates, Phase transitions, *Beryllium compounds, *Ammonium compounds, Fluorides, *Strontium compounds, Nitrates, *Iron alloys, *Nickel alloys, *Copper alloys, *Manganese alloys, *Chromium alloys, *Molybdenum alloys, *Tungsten alloys, Fused materials, Metals, *Chlorine compounds, Anhydrides, *Carbon tetrachloride, *Vanadium compounds, *Titanium compounds, *Neodymium compounds, *Lanthanum compounds, Oxides, Chlorine, *Borates, *Zinc compounds, *Alkali metal compounds, *Alkaline earth compounds, *Ores (Non-metallic), *Stratigraphy, *Magnesium compounds, Phosphates, Hydrides, *Deuterium oxide.

Contents:
A possible application of the Lambert-Beer Law to the study of gaseous systems in a wide temperature range, by S. A. Shchukarev and others
The reaction between aluminum chloride and lithium hydride in organic solvents, by V. I. Mikheeva and others
Application of crystal field theory for the explanation of thermodynamic and kinetic properties of complex compounds, by K. B. Yatsimirskii
Behavior of diacido-bis-dimethylglyoxime cobaltic acids in aqueous solution, by A. V. Ablov and G. P. Syrtsova
Addition products of aniline and aniline derivatives with cobalt halides, by A. V. Ablov and others
Complex copper salts of α-hydroxyacids, by A. V. Ablov and D. G. Batyr
Preparation of complex compounds of quadrivalent platinum with six different inner sphere substituents, by L. N. Essen and A. D. Gel'man
Studies on the mechanism of phosphotungstate formation, by V. I. Spitsyn and K. G. Koneva
The complex compounds of trihydroxyglutaric acid with some metals, by Ya. A. Fialkov and V. V. Grigor'eva
Studies on copper thiocyanate complexes in solution, by A. M. Golub
Description of multicomponent systems by the method of optimum projections, by F. M. Perel'man
Complex formation in a ternary system composed of potassium, cadmium, and lead chlorides, by I. I. Il'yasov and others
Ternary system of lithium, sodium and potassium acetates, by G. G. Diogenov
Reaction of cerium dioxide with oxides of alkaline-earth metals, by E. K. Keler and others
Experimental data on the phase transition of γ-Na_2SO_4 into δ-Na_2SO_4, by A. N. Khlapova
The reaction between beryllium oxyacetate and ammonium bifluoride, by N. Ya. Turova and others
Reciprocal system composed of lithium and strontium chlorides and nitrates, by M. V. Tokareva and A. G. Bergman
The construction of approximate melting point diagrams of the Fe-Ni-Cu-Mn-Cr system, by F. M. Perel'man
Heteromorphous structures in ferrous alloys containing molybdenum and tungsten, by D. F. Zhirnov and others
Reactions of salts and metals in the fused state, by E. I. Elagina and A. P. Palkin
Melting point diagram of the perchloric anhydride-carbon tetrachloride system, by A. A. Zinov'ev and V. Ya. Rosolovskii
Reaction between vanadium chlorides and titanium and carbon tetrachlorides, by I. S. Morozov and D. Ya. Toptygin
Reaction of neodymium and lanthanum oxides with gaseous chlorine, by I. S. Morozov and B. G. Korshunov
Ternary system composed of potassium metaborates, chlorides and tungstates, by V. I. Posypaiko and others
Solubility of iron in fused zinc, alkali metal, and alkaline-earth metal chlorides, by V. P. Kochergin and others

Solubility isotherms in the systems: $BeCl_2$-$CaCl_2$-H_2O; $BeCl_2$-$SrCl_2$-H_2O and $BeCl_2$-$BaCl_2$-H_2O at 25°, by V. P. Blidin and others

Description of the azambur mirabilite deposite, by D. I. Eristavi and others

Isotherm of the system MnO-P_2O_5-H_2O at 25°, by M. V. Goloshchapov

Studies on the reaction between NH_4BeF_3 and NH_4MnF_3 in aqueous solutions, by L. R. Batsanova and others

Isotopic exchange of hydrogen between the water bound in certain heteropoly compounds and heavy water containing deuterium, by V. I. Spitsyn and Yu. F. Berezkina

"Production of heavy water" ed. by G. M. Murphy and others: book review by E. I. Gorovich.

Bergman, A. G. and Tokareva, M. V.
FUSIBILITY DIAGRAM IN THE SYSTEM FROM NITRATES AND CHLORIDES OF BARIUM AND CALCIUM. [1962] 14p.
Order from K-H $17.50 K-H-8653 d

Trans. of Zhurnal Neorg[anicheskoi] Khim[ii] (USSR) [1957] v. 2 [no. 8] p. 1888-1894.

DESCRIPTORS: *Barium compounds, *Calcium compounds, *Nitrates, *Chlorides, Phase studies.

Dyatkina, M. E.
ELECTRONIC STRUCTURE OF COMPOUNDS OF PLATINUM WITH ETHYLENE. [1962] [7]p. 3 refs.
Order from OTS or SLA $1.10 62-18886

Trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1958, v. 3 [no. 9] p. 2039-2044.
Another trans. is available from OTS $3.75 in AEC-tr-4457 [Jan 62] 317p.

DESCRIPTORS: *Complex compounds, *Platinum compounds, *Ethylenes, *Chemical bonds, Atomic orbitals, Molecular isomerism.

The formation of bonds in complexes of platinum with ethylene has been examined on the basis of the analysis of the symmetry properties of the atomic orbitals of platinum atoms and molecular orbitals of ethylene π-electrons. In $(C_2H_4PtCl_3)^-$ the initial state of the Pt atom is the d^9sp state; three bonds with chlorine atoms are formed at the expense of the atomic orbitals d_{z2}, s, and p. Besides these, there are two donor acceptor bonds: at the expense of the reaction of electron pairs in the occupied orbital of ethylene with the free p-orbital of Pt and at expense of the reaction of pairs electrons in the occupied d_{xz} orbital of Pt with the free antibonding ethylene orbital. These donor-acceptor bonds can be studied as tricentric orbitals, filled with electron pairs. In cis-$(C_2H_4)_2PtCl_2$ it is possible to form two bonds with the chlorine atoms at the expense of one s- and one d-orbital of Pt and four donor-acceptor bonds with two ethylene molecules. In trans-$(C_2H_4)_2PtCl_2$ the formation of two bonds with the chlorine atoms and two donor-acceptor bonds at the expense of the electron pair of two ethylene molecules is possible only with the excitation of the free d-electron of Pt to the p-orbital with the liberation of one d-orbital; only one donor-acceptor bond can be formed at the expense of the interaction of a pair of Pt electrons with the free orbitals of the ethylene molecules. Thus, the total number of such bonds is 3. From this it follows that the trans-compounds are less stable in comparison with the cis-form.

Ehrlich, P., Alt, B., and Gentsch, L.
THE CHLOROHYDRIDES OF THE ALKALINE EARTH METALS. [1962] 29p.
Order from K-H $36.25 K-H 4050 c

Trans. of Zeitschrift f[ür] Anorg[anische] Chemie (East Germany) 1956, v. 283, p. 58-73.

DESCRIPTORS: *Chlorine compounds, *Hydrides, *Alkaline earth metals.

Esin, O. A. and Lyumkis, S. E.
BEHAVIOR OF OXIDES OF HEAVY METALS IN FUSED CHLORIDES. [1962] 7p.
Order from K-H $8.75 K-H 8050

Trans. of #Zhurnal Neorganicheskoi Khimii (USSR) 1957, v. 2, no. 5, p. 1145-1148.

DESCRIPTORS: Behavior, *Oxides, *Metals, *Chlorides, Fused materials.

Il'yasov [I. I.], Rozhkovskaya [L. V.] and Bergman [A. G.].
FUSIBILITY DIAGRAM IN THE SYSTEM FROM BROMIDES AND CHLORIDES OF POTASSIUM AND THALLIUM. [1962] 8p.
Order from K-H $10.00 K-H 8653 c

Trans. of #Zhurnal Neorg[anicheskoi] Khim[ii] (USSR) 1957, v. 2, p. 1883-1887.

DESCRIPTORS: *Fused materials, Maps, *Bromides, *Chlorides, *Potassium compounds, Thallium compounds.

Il'yasov, I. I., Fonardzhyan, V. M., and Bergman [A. G.].
FUSIBILITY IN THE SYSTEM FROM BROMIDES AND CHLORIDES OF SODIUM AND THALLIUM. [1962] 9p.
Order from K-H $11.25 K-H 8653 g

Trans. of #Zhurnal Neorg[anicheskoi] Khim[ii] (USSR) 1957, v. 2, p. 2154-2158.

DESCRIPTORS: Fused materials, *Bromides, *Chlorides, *Sodium compounds, Thallium compounds.

Il'yasov, I. I., Shchemeleva, G. G., and Bergman, A. G.
FUSIBILITY IN THE SYSTEM FROM BROMIDES AND CHLORIDES OF SODIUM AND LEAD. [1962] 8p.
Order from K-H $10.00 K-H 8653 h

Trans. of #Zhurnal Neorg[anicheskoi] Khim[ii] (USSR) 1957, v. 2, p. 2168-2173.

DESCRIPTORS: *Fused materials, *Bromides, *Chlorides, *Sodium compounds, Lead compounds.

Irmann, F.
INFORMATION ON THE MAGNESIUM CARBIDES. 5 Mar 51, 28p. (figs. omitted) 52 refs.
Order from SLA $2.60 62-18965

Trans. of Helvetica Chimica Acta (Switzerland) 1948, v. 31, p. 1584-1602.

DESCRIPTORS: *Magnesium compounds, *Carbides, Preparation, Chemical analysis, Thermochemistry, Thermal conductivity, Pyrolysis, Heat of solution, Crystal structure, *Acetylenes, Adsorption

The formation of the magnesium carbides from the metal and various hydrocarbons, and also from magnesium diethyl and acetylene was investigated and their temperature condition were determined. In order to analyze the gases, acetylene (C_2H_2) and methylacetylene (C_3H_4), which are liberated during hydrolysis of the two carbides, and adsorption method was developed. Preparations containing 70 per cent MgC_2 and 85 per cent Mg_2C_3, respectively, were produced. (Author)

Straumanis, M. E. and Ballass, J. I.
REACTION OF METALLIC TITANIUM, ZIRCONIUM, HAFNIUM, AND THORIUM WITH ACIDS, PARTICULARLY HYDROFLUORIC ACID. 1 Nov 61, 14p. 11 refs.
Order from SLA $1.60 63-10116

Trans. of Z[eitschrift für] Anorg[anische] Chem[ie] (East Germany) 1955, v. 278, p. 33-41.
Another trans. is available from SLA as AEC-tr-2820, 6p.

DESCRIPTORS: *Titanium, *Zirconium, *Hafnium, *Thorium, Resistance, Acids, *Hydrogen compounds, *Fluorides, Surfaces, Oxides, Corrosion, Chemical reactions.

Thilo, E.
THE CHEMISTRY OF CONDENSED PHOSPHATES, tr by Bertha P. Klenova. 15 Jan 52 [11]p. 39 refs. TVA 3076.
Order from OTS or SLA $1.60 62-25809

Trans. of Angew[andte] Chem[ie] (West Germany) 1951, v. 63, p. 508-511.

DESCRIPTORS: *Phosphates, *Chemistry, Phosphoric acids, Condensation reactions.

Important conclusions with respect to the constitution were derived from the study of the structure of the anions of condensed phosphoric acids. A division can now be made into metaphosphates, polyphosphates, isometaphosphates, and another group for which the constitution has not been definitely established as yet. Graham's and Kurrol salts belong to this latter group. An important contribution was made to the chemistry of the transformations of Kurrol salts. (Author)

Zinovier, A. A. and Rosolovskii, V. Ya.
CHLORIC ANHYDRIDE - WATER SYSTEMS. [1962] 10p. (figs. omitted) 23 refs.
Order from OTS or SLA $1.10 62-18747

Trans. of #Zhurn[al] Neorg[anicheskoi] Khim[ii] (USSR) 1958, v. 3, no. 10, p. 2382-2389.

DESCRIPTORS: *Chlorine compounds, *Anhydrides, *Water, Melting, Crystallization, Chemical analysis, Thermochemistry, Density, Phase studies, Preparation.

The melting characteristics in the system Cl_2O_7-H_2O were studied in the 100-25 mol. % Cl_2O_7 range and it was shown that there is absence of perchloric acid crystallization curve in the melting point diagram. Evidence is offered that the melting point of anhydrous perchloric acid should be -100°C. and not -112°C. as it is accepted in the literature. Dilatometric methods were used to establish the transition temperature of the polymorphic transformation of oxonium perchlorate to be -24.9°C. Densities of the low temperature and the high temperature modifications of oxonium perchlorate were found to be $d_4^{-25} = 2.040$ and $d_4^{25} = 2.095$ respectively. Evidence is presented to indicated possible existence of two liquid phases in the 55-100 mol.% Cl_2O_7 concentration range. An improved method of preparation of chloric anhydride, Cl_2O_7, is described. (Author)

Organic Chemistry

LIQUID PHASE OXIDATION BY OXYGEN OF PHENYL CYCLOHEXANE AND DECOMPOSITION OF 1-PHENYL-CYCLOHEXYL HYDROXIDE. [1962] 16p.
Order from K-H $20.00 K-H 11949a

Trans. of Kogyo Kagaku Zasshi (Japan) [1957] v. 60, no. 3, p. 268-272.

DESCRIPTORS: *Hydroxides, *Cyclohexanes, *Phenyl radicals, Decomposition, Oxygen, *Oxidation, Liquids, Phase studies.

Balandin, A. A., Bogdanova, O. K., and Shcheglova, A. P.
KINETICS OF BUTYLENE DEHYDROGENATION ON THE CHROMIC CATALYST. [1962] [22]p. 12 refs.
Order from OTS or SLA $2.60 62-20434

Trans. of Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1946, no. 5, p. 497-513. Other translations are available from ATS $29.95 as ATS-00N54R [1961] 21p. and in Dutch from OTS or ETC $1.91 as 61-17695, MTWL-11, 23p.

DESCRIPTORS: *Butenes, *Dehydrogenation, *Chromium catalysts, Catalysts.

Dehydrogenation kinetics of butylene to butadiene was studied on chromia catalyst. It was found that the reaction rate obeys the Langmuir type equation and that at 560 C the constants entering in it, considered as the adsorption constants of butylene, butadiene and hydrogen, are in the ratio 1:9.5:0.82, i.e. butadiene is adsorbed on the catalytically active surface significantly stronger, than butylene, while hydrogen is adsorbed approximately as much as butylene. During production of the results the rates of side reactions were discounted - the decompositions and hydrogenations of butylene and of butadiene. (Author)

Berl, E. and Bitter, Joh.
FORMATION OF ETHYLCHLORIDE FROM ETHYLENE AND HYDROGEN CHLORIDE, pt. 1 [1962] 10p.
Order from K-H $12.50 K-H 12190b

Trans. of [Chemische] Berichte (Germany) 1924, v. 57, p. 95-99.

DESCRIPTORS: *Ethyl radicals, Ethylenes, *Chlorides, Ethanes, Synthesis, *Hydrogen compounds.

Broich, Franz
OXIDATION REACTIONS IN PETROCHEMISTRY PLENARY SESSION OF THE GERMAN CHEMICAL SOC. MEETINGS, AACHEN, 22 Sep 62. [1962] 65p.
Order from K-H $81.25 K-H 11777 b

Trans. of Chemie-Ing[enieur]-Techn[ik] (West Germany) 1962, v. 34, no. 1, p. 45-61. Another trans. is available from SLA $7.60 as 62-18671 [1962] [72]p.

DESCRIPTORS: *Oxidation, Chemical reactions, *Petroleum, *Chemistry, Germany, Scientific organizations.

Busch, M. and Schmidt, Walter.
CATALYTIC HYDROGENATION OF ORGANIC HALOGEN COMPOUNDS. [1962] 15p.
Order from K-H $18.75 K-H 3411 c

Trans. of [Chemische] Ber[ichte] (West Germany) 1929, v. 62, p. 2612-2620.

DESCRIPTORS: *Halogen compounds, *Organic compounds, *Hydrogenation, *Catalysis.

Cat, A. de and Dormael, A. van.
HETEROCYCLIC DERIVATIVES OF THE PYRIMIDOBENZIMIDAZOLE GROUP I (Derives Heterocycliques de la Classe des Pyrimidobenzimidazoles). [1961] [20]p. (foreign text included) 15 refs.
Order from SLA $1.60 61-20208

Trans. of Soc[iete] Chim[ique de] Belg[ique]. Bull[etin] 1950, v. 59, p. 573-580.

DESCRIPTORS: *Heterocyclic compounds, Synthesis, Amines, *Benzimidazoles, Azoles, Condensation reactions, *Pyrimidines, Photographic emulsions, Stability, Preservation.

The authors describe a series of pyrimido-[1,2-]-benzimidazoles and related compounds obtained by the condensation of 2-aminobenzimidazole, 4-5-diphenyl-2-aminoimidazole and 2-aminoimidazoline with β-ketonic esters, malonic esters, and β-imino-nitriles. (Author)

Elagina, N. V. and Zelinskii, N. D.
CONTACT DEHYDROGENATION OF BENZBICYCLONONENE. [1961] 1p. 4 refs.
Order from OTS or SLA $1.10 61-18333

Trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1941, v. 30, no. 8, p. 726-727.

DESCRIPTORS: *Hydrocarbons, *Dehydrogenation, Ketones, Benzenes

Benzbicyclononene was dehydrogenated at 300° C. in the presence of platinized carbon. The dehydrogenation involves scission of the intermediate 6-member ring, and diphenylmethane results. Further dehydrogenation results in conversion of diphenylmethane to fluorene. (Author)

Fakuawa, Sadaomi.
PREPARATION OF METHYL PHENYL SILANE DIOL. [1962] 16p.
Order from K-H $20.00 K-H 5866 i

Trans. of Kogyo Kagaku Zasshi (Japan) 1956, v. 59, p. 1206-1209.

DESCRIPTORS: Synthesis, *Methyl radicals, *Phenyl radicals, *Silanes.

Fischer, Franz.
NOTES REGARDING THE DEVELOPMENT OF OUR BENZINE SYNTHESIS FROM CARBON OXIDE AND HYDROGEN AT ORDINARY PRESSURE. [1962] 35p. (figs. omitted) 23 refs.
Order from SLA $3.60 63-10694

Trans. of Brennstoff-Chemie (Germany) 1930 [v. 11] 15 Dec, p. 489-500.

DESCRIPTORS: *Benzine, Synthesis (Chemistry), *Carbon compounds, *Oxides, *Hydrogen, Barometric pressure, Catalysts, Pressure.

Franzen, Volker.
REACTION MECHANISMS V. THE PRINS REACTION. [1962] 9p.
Order from K-H $11.25 K-H-3763 a

Trans. of Chemiker Zeitung (West Germany) 1955, v. 79, p. 335-337.

DESCRIPTORS: Chemical reactions, *Reaction kinetics, *Glycols, Production.

Freni, Maria and Valenti, Venanzio.
TRIPHENYLPHOSPHINIC HYDRIDES OF RHENIUM. [1962] 11p. 7 refs.
Order from SLA $1.60 62-18911

Trans. of Gazzetta Chimica Italiana, 1961, v. 91 [no. 12] p. 1357-1364.

DESCRIPTORS: *Complex compounds, *Rhenium compounds, Phenyl radicals, *Phosphines, Halogen compounds, *Hydrides, Synthesis, Transition elements.

In the reaction between $Re(PR_3)_2X_2$ and $NaBH_4$ in ethyl alcohol, one directly obtains compound $H_3Re(PR_3)_2 . 2C_2H_5OH$ which, recrystallized by benzol, yields $H_3Re(PR_3)_2$ in red crystals. The same reaction, in the presence of an excess of triphenylphosphin, yields yellow $H_3Re(PR_3)_4$. These hydrides, when treated with chlorinated solvents, halohydric acids or halogens, yield $Re(PR_3)_2X_4$ (X=Cl, Br) type red crystalline compounds. (Author)

Gefter, E. L.
ORGANOPHOSPHORUS MONOMERS AND POLYMERS, tr. by J. Burdon. 1962, 300p.
Order from Macmillan Co., 60 Fifth Ave., New York, 11, N. Y. $12.50

Trans. of mono. [Fosfororganicheskie Monomery i Polimery, Moscow, 1960, 287p.].
A partial trans. (table of contents) is available from ATS $2.75 as ATS-O2M47R [1960] 3p.

DESCRIPTORS: *Organic compounds, *Phosphorus compounds, Synthesis, Chemical properties, Physical properties, Tables, Polymers.

Haszeldine, R. N.
RECENT CHEMISTRY OF FLUORINE ORGANOMETALLIC AND ORGANOMETALLOID COMPOUNDS OF FLUORINE. [1962] 34p.
Order from K-H $42.50 K-H 3382c

Trans. of Angew[andte] Chemie (West Germany) 1954, v. 66, p. 693-701.

DESCRIPTORS: *Chemistry, *Metalorganic compounds, *Fluorides.

Hock, Heinrich and Ernst, Franz.
HYDROPEROXIDES FROM METAL-CONTAINING HYDROCARBONS, I. [1962] 14p.
Order from K-H $17.50 K-H 12385 a

Trans. of Chemische Berichte (West Germany) 1959, v. 92, p. 2716-2723.

DESCRIPTORS: *Hydroperoxides, *Metalorganic compounds, *Hydrocarbons.

Kamneva, A. I. and Salmin, L. A.
AN INVESTIGATION OF THE OXIDATION PRODUCTS OF TETRALIN. [1962] 9p. 6 refs.
Order from OTS or SLA $1.10 62-18759

Trans. of mono. Problemy Okisleniya Uglevodoradov [Problems on the Oxidation of Carbons, Moscow] 1954, p. 140-144.

DESCRIPTORS: Naphthalenes, *Tetralin, *Oxidation, Peroxides, Acids, Phenols, Ketones, Carboxylic acids.

Klamann, Dieter and Krämer, Ulrich.
THE SIDE CHAIN OXIDATION OF DIALKYLAROMATIC COMPOUNDS. Extract from the dissertation by U. Krämer, Technische Hochschule, Berlin. [1962] 20p.
Order from SLA $1.60 62-18870

Trans. of Erdöl u[nd] Kohle (West Germany) 1962, v. 15, no. 4, p. 262-268.

DESCRIPTORS: *Naphthalenes, Methyl radicals, Oxidation, *Oxidizers, Oxygen, Hypochlorites, Nitric acid, Sulfur, Reaction kinetics, *Alkyl radicals.

In order to get a more comprehensive picture of the law of side chain oxidizability of dialkyl aromatics, different oxidation processes have been studied, dimethyl naphthalenes having served as an example. The oxidations by air or by hypochlorite only showed technically unsatisfactory results. Nitric acid exclusively yielded 1-nitro-2-methylnaphthoic acids besides 1.8-dinitro dimethyl naphthalenes. The oxidation using sulphur in an alkalinic reaction mixture led to 60% naphthalene dicarboxylic acid and 40% methyl naphthoic acid. The conditions of chemical reaction engineering indicate a possibility for the commercial application of this process. (Author)

Knobloch, Edward, Jancik, Fedie and others.
THE DETERMINATION OF PHYTOL AND PHYTADIENE AND THE PREPARATION OF PURE SAMPLES. [1962] 8p.
Order from K-H $10.00 K-H 6609-a

Trans. of [Chemicke Listy (Czechoslovakia) 1957, v. 51, no. 7, p. 1379-1381].
Another trans. is available from SLA mi$1.80, ph$1.80 as 61-10914 [1961] 8p.

DESCRIPTORS: *Phytol, Synthesis.

Kölbel, H. and Kühn, P.
CONSTITUTION AND PROPERTIES OF SURFACE-ACTIVE MATERIALS. I. MEASUREMENTS OF p-n-ALKYL BENZENE SULFONATES. [1962] 15p. 41 refs.
Order from SLA $1.60 62-20452

Trans. of Angew[andte] Chem[ie] (West Germany) 1959, v. 71, no. 6, p. 211-215.
Another trans. is available from SLA $1.60 as 61-16186 [1961] 19p.

DESCRIPTORS: *Sulfonates, *Detergents, *Wetting agents, *Phenyl radicals, Alkyl radicals, Textiles, Processing, Surface-active substances.

For abstract see Technical Translations 6: 154, 1961

Kunori, Masao
REACTION OF 1-METHYL INDOLE WITH BROMINE. Report 5 of Studies in Indole Links. [1962] 12p. 13 refs.
Order from SLA $1.60 63-10321

Trans. of [Nihon] Kagaku Zasshi (Japan) 1962, v. 83, p. 836-838.

DESCRIPTORS: Chemical reactions, *Indoles, *Methyl radicals, *Bromine, Catalysts, Reduction, Absorption spectrum, Synthesis (Chemistry), Complex compounds.

Kurilenko, O. D., Kaban, A. P., and Nedyuzhin, A. A.
INVESTIGATION OF THE RHEOLOGICAL PROPERTIES OF SOLUTION OF STARCH PASTE, AMYLOSE AND AMYLOPECTIN. [1962] 8p.
Order from K-H $10.00 K-H 11891

Trans. from Izvestiya Vysshikh Uchebnykh Zavedenii. Pishchevaya Tekhnologiya (USSR) 1961, no. 1. [p. 12-16].

DESCRIPTORS: *Fluid dynamic properties, Viscosity, *Starches, *Carbohydrates, *Polysaccharides, Colloids.

Lutsenko, I. F., Kraits, Z. S., and Bokovoi, A. P
VINYL ESTERS OF PHOSPHORUS ACIDS. [1962] 6p.
Order from ATS $8.00 ATS-02P64R

Trans. of mono. Khim[iya] i Primenenie Fosfor-organ[icheskikh] Soedin[enii] (Akad. Nauk SSSR, Kazansk. Filial, tr. Konf. (no. 2) 1959) [Moscow] 1962, p. 305-309.
A complete trans. of mono. is available from OTS or SLA $38.50 as 62-33349, JPRS-15432, 25 Sep 62 [1160]p.

DESCRIPTORS: *Phosphorus acids, *Vinyl radicals, *Esters, Organic compounds, Phosphorus compounds.

Magat, Michel.
PREPARATION AND PROPERTIES OF GRAFT POLYMERS. Nov 61 [6]p.
Order from SLA $1.10 62-20024

Trans. of Kunststoffe (East Germany) 1960, v. 50, no. 1, p. 57-59.

DESCRIPTORS: *Polymers, Preparation, Mechanical properties, Polymerization

Matsui, Koji; Hagiwara, Kikuyo; and Hayashi, Atsuo.
REACTION OF CYANURIC CHLORIDE WITH ALCOHOLS, I. [1962] [27]p. (foreign text included) 9 refs.
Order from SLA $2.60 62-18829

Trans. of Yuki Gasei Kagaku Kyokai Shi (Japan) 1960, v. 18, p. 97-109.

DESCRIPTORS: *Cyanogen chlorides, *Alcohols, Chemical reactions, Deoxidation, Sodium compounds, Calcium compounds, Carbonates, *Reaction kinetics, *Chlorides

Müller, A.
IMPURITIES OF CARBIDE ACETYLENE. [1962] 7p.
Order from SLA $1.10 62-18934

Trans. of Angew[andte] Chem[ie] (West Germany) 1950, v. 62, p. 166-167.
Another trans. is available from SLA mi$1.80, ph$1.80 as 60-18055 [1960] 8p.

DESCRIPTORS: *Acetylenes, *Carbides, Impurities, Hydrogen compounds, Sulfides, Phosphides, Arsenides, Ammonia, Sulfur, Purification, Chlorine.

Nazarov, I. N. and others.
CONDENSATION OF ALDEHYDES AND KETONES WITH ACETYLENE UNDER PRESSURE. [1962] 9p. 21 refs.
Order from OTS or SLA $1.10 62-20101

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim-[icheskikh] Nauk. Izvest[iya] 1956, p. 960-966.

DESCRIPTORS: *Aldehydes, *Ketones, *Acetylenes, Pressure, Synthesis (Chemistry), Potassium compounds, *Condensation reactions.

Investigations of a new method of synthesizing secondary and tertiary acetylenic alcohols by the condensation of aldehydes and ketones with acetylene under pressure in the presence of finely divided KOH were carried out.

Parani, V. P.
ORGANIC CHARGE TRANSFER COMPLEXES. [1962] 18p.
Order from ATS $28.00 ATS-26P65R

Trans. of #Usp[ekhi] Khim[ii] (USSR) 1962, v. 31, no. 7, p. 822-837.

DESCRIPTORS: *Complex compounds, Organic substances, Chemical reactions, Ions.

Rafikov, S. R. and Sorokina, R. A.
CHEMICAL TRANSFORMATIONS OF POLYMERS. IV. THERMOOXIDATIVE TRANSFORMATIONS OF POLYAMIDES (Khimicheskie Prevrashcheniya Polimerov. IV. Termookislitel'nye Prevrashcheniya Polyamidov). Nov 61 [11]p. 18 refs. TIL/T. 5249; [DSIR] NLL M. 3552.
Order from OTS or SLA $1.60 62-25360

Trans. of Vysokomol[ekulyarnye] Soedineniya (USSR) 1961, v. 3, no. 1, p. 21-29.
Another trans. is available from ATS $15.75 as ATS-40N53R [1961] 10p.

DESCRIPTORS: Polymers, *Amides, *Polyamide plastics, *Plastic films, *Synthetic fibers, Thermochemistry, Oxidation, Transformations.

Topchiev, A. V., Zavgorodnii, S. V., and Paushkin, Ya. M.
BORON FLUORIDE AND ITS COMPOUNDS AS CATALYSTS IN ORGANIC CHEMISTRY, tr. by J. T. Greaves. [1962] 326p.
Order from Macmillan Co., 60 Fifth Ave., New York, 11, N. Y. $12.00

Trans. of [Ftoristyi Bor i Ego Soedinenii Kak Katalizatory v Organicheskoi Zhizn', Moscow, 1956].

DESCRIPTORS: *Catalysts, *Boron compounds, *Fluorides, Organic compounds, Physical properties, Chemical properties, Complex compounds, Hydrogen compounds, Oxygen compounds, Sulfur compounds, Ethylenes, Acetylenes, Dienes, Nitration, Sulfuration, Condensation reactions.

Topchiev, A. V.
NITRATION OF HYDROCARBONS AND OTHER ORGANIC COMPOUNDS, tr. by Catherine Matthews. [1962] 329p.
Order from Macmillan Co., 60 Fifth Ave., New York, 11, N. Y. $15.00

Trans. of mono. [Nitrovanie Uglevodorodov i Drugikh Organicheskikh Soedineniya, Moscow, 1949]

DESCRIPTORS: *Organic compounds, Hydrocarbons, *Nitration, Nitric acid, Amines, Nitrogen compounds, Oxides, Nitrates, Chlorides.

Trommsdorff, E., Köhle, H., and Lagally, P.
POLYMERIZATION OF METHACRYLIC ACID METHYL ESTER. [1962] 17p. (figs. tables refs. omitted).
Order from SLA $1.60 63-10009

Trans. of Makromolekulare Chemie (Switzerland) 1948 [v. 2] 1 Jan, p. 169-198.

DESCRIPTORS: *Polymerization. *Acrylic acids, *Acrylic acid esters, *Methyl radicals, *Viscosimeters, Acceleration, Explosions, Colloids, Acrylic resins, Polymers.

Wittig, G. and Schlosser, M.
PHOSPHINE ALKYLIDENES AS OLEFIN-FORMING REAGENTS, PT. 5: DECOMPOSITION OF DIAZO COMPOUNDS IN THE PRESENCE OF TRIPHENYLPHOSPHINE [Phosphin-Alkylene als Olefinbildene Reagenzien. 5. Die Zersetzung von Diazoverbindungen in Gegenwart von Triphenylphosphin]. [1962] 7p.
Order from ATS $11.65 ATS-55P66G

Trans. of Tetrahedron (Gt. Brit.) 1962, v. 18, p. 1023-1028.

DESCRIPTORS: *Azo compounds, Decomposition, *Reagents, *Phosphines, Phenyl radicals, Alkyl radicals.

Yakushkina, S. E. and Kislyakova, N. V.
CARBONATION OF PARADICHLOROBENZENE. [1962] 5p.
Order from K-H $6.25 K-H 8999

Trans. of Akad[emiya] Nauk SSSR. Otdelenie Khimi-[cheskikh] Nauk. Izv[estiya] 1958, no. 9, p. [1119]1122.
Another trans. is available from ATS $6.80 as ATS-19L30R [1959] 4p.

DESCRIPTORS: *Benzenes, *Chlorides, *Carbonyl radicals, Chemical reactions.

Ziegler, K.
POLYMERIZATION OF ETHYLENE. [1962] [15]p. 5 refs.
Order from SLA $1.60 62-20057

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1956 [no. 1] p. 1-6.

DESCRIPTORS: *Polymerization, *Ethylenes, *Metalorganic compounds, Butenes, Polymers, Aluminum compounds, Polyethylene plastics.

Physical Chemistry

JOURNAL OF PHYSICAL CHEMISTRY: SELECTED ARTICLES. 10 Jan 63, 24p. 25 refs. FTD-TT-62-1462.
Order from OTS or SLA $2.60 63-15554

Unedited rough draft trans. of #Zhurnal Fizicheskoi Khimi (USSR) 1962, v. 36, no. 5, p. 989-992. 1089-1094.

DESCRIPTORS: *Ozone, Synthesis, Electric discharges Reaction kinetics, Low pressure research, Alkali metal compounds, *Lithium compounds, *Sodium compounds,*Potassium compounds, *Cesium compounds, *Borohydrides, *Polarographic analysis.

Contents:
Electrosynthesis of ozone. V. Ozone synthesis in a stream under reduced pressure, by V. G. Samoylovich and others
Polarographic study of borohydrides of alkali metals, by K. N. Mochalov and G. G. Gil'manshin.

SILVER COATING GLASS AND RELATED METHODS FOR THE PRODUCTION OF THIN METAL COATINGS. 23 Oct 61 [20]p. 12 refs.
Order from SLA $1.60 62-18219

Trans. of mono. Handbuch der Experimentalen Physik (Handbook of Experimental Physics) n.p., 1926, chap. 4, p. 370-384.

DESCRIPTORS: *Glass, *Metal coatings, Silver, Coatings, Thin films, Production, *Mirrors, Plating.

Antipin, L. N. and Knolmanskikh, Yu. B.
THE NATURE OF THE SECOND POTENTIAL IN MOLTEN SALTS. [1962] 10p.
Order from K-H $12.50 K-H 8024 a

Trans. of Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1957, v. 31, p. 232-237.
Another trans. is available from CCT $16.00 as CCT-240TM, 8p.

DESCRIPTORS: *Fused materials, *Electrochemistry, Salts.

Balandin, A. A.
STRUCTURE OF MOLECULES AND THEIR REACTIVITY IN CATALYSIS. [1962] [13]p. 56 refs.
Order from OTS or SLA $1.60 62-20381

Trans. of Kinetika i Kataliz (USSR) 1960, v. 1 [no. 1] p. 5-14.

DESCRIPTORS: *Molecular structure, *Catalysis, Energy, Crystallization, Organic compounds, Reaction kinetics.

The multiplet theory, examining the structural and energetic factors in catalysis, in combination with the electronic conceptions of organic chemistry, opens the path to an explanation of the effect of molecular structure on the heterogenous - catalytic reactions rate. The found theoretic results agree with the experimental data produced in the author's laboratory. (Author)

Baron, Guy and Pesneau, Michel.
THE EXISTENCE AND PREPARATION OF THE MONOHYDRATE OF CALCIUM CARBONATE, tr. by Bertha P. Klenova. 7 Dec 56, 3p. 5 refs. TVA 3597.
Order from OTS or SLA $1.10 62-32275

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1956, v. 243, p. 1217-1219 (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: *Calcium compounds, *Carbonates, *Hydrates, Crystallization, X-ray diffraction analysis, Infrared spectroscopy, Sea water, Sodium compounds, Carbonates, Chemical reactions.

Becherer, G.
CERTAIN PROPERTIES OF LUSTROUS CARBON FILMS. [1962] 2p. 4 refs.
Order from SLA $1.10 62-18909

Trans. of [die] Naturwissenschaften (West Germany) 1961, v. 48, no. 23, p. 712.

DESCRIPTORS: *Films, *Carbon. Surface properties.

Böhme, Horst and Morf, Dieter.
CONCERNING ALPHA-AZIDO THIOETHERS AND ALPHA-AZIDO SULFONES. [1961] 3p. (experimental part omitted) 10 refs.
Order from SLA $1.10 61-20658

Trans. of Chemische Berichte (West Germany) 1957, v. 90, no. 3, p. 446-448.

DESCRIPTORS: *Azides, *Thio radicals, *Ethers, *Sulfones, Chemical reactions, Ultraviolet spectroscopy, Absorption spectra.

By the reaction of the alpha-halogenated thioethers with sodium azide in aqueous solution alpha-azido thioethers are obtained, which are oxidized to alpha-azido sulfones by monoperoxyphthalic acid. The ultraviolet absorption of these compounds is described as well as their behavior upon heating and upon catalytic hydration. The reaction of the azides with phenylacetylene leads to mixtures of two isomeric 1,2,3-triazoles. (Author)

Cordes, H. and Rottger, H.
A CONTRIBUTION TO THE ELECTRICAL CONDUCTIVITY MECHANISM OF MELTS OF METALLO-ORGANIC COMPLEX COMPOUNDS AND THEIR SOLUTIONS WITH ASSOCIATING SOLVENTS. [1962] 19p.
Order from K-H $23.75 K-H 9820

Trans. of Zeit[schrift] für Elektrochemie (West Germany) 1959, v. 63, p. 1030-1037.

DESCRIPTORS: *Electrical conductance, Melting, *Metalorganic compounds, Solutions, Solvents, Complex compounds.

Delimarskii, Yu. K.
THE ELECTRODE POTENTIALS OF METALS IN FUSED SALTS [Elektrodnye Potentsialy Metallov v Rasplavlennykh Solyakh]. [1962] 24p.
Order from K-H $30.00 K-H 3642

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1955, v. 29, no. 1, p. 28-38.
Another trans. is available from SLA as RT-3121.

DESCRIPTORS: *Electrodes, *Electric potential, *Metallic compounds, *Fused materials, *Salts.

Drossbach, P. and Rossberger, E.
THE ELECTROLYSIS OF POTASSIUM TITANIUM FLUORIDE IN MOLTEN MIXTURES WITH POTASSIUM CHLORIDE-SODIUM CHLORIDE. [1962] 12p.
Order from K-H $15.00 K-H 5408

Trans. of Zeitschrift für Elektrochemie (West Germany) 1956, v. 60, no. 5, p. 470-473.

DESCRIPTORS: *Electrolysis, *Potassium compounds, *Titanium compounds, *Fluorides, Mixtures, *Sodium compounds, *Chlorides.

Efimov, E. A., Erusalimchik, I. G., and Gorgoraki, E. I.
RECOMBINATION OF CURRENT CARRIERS ON THE SURFACE OF A GERMANIUM CATHODE. [1962] 3p. 3 refs.
Order from OTS or SLA $1.10 63-10673

Trans. of #Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1962, v. 36, p. 1578-[1579].

DESCRIPTORS: Surface properties, *Germanium, Semiconductors, Cathodes, Polarization, Electrochemistry.

Surface recombination at the germanium-electrolyte interface was measured after cathodic polarization in the range of current density 10^{-3} - 2 x 10^{-2} amp cm^{-2}. The value of surface recombination is quite sensitive not only to the adsorption of hydrogen but also to a variation in the nature of the bond between germanium and hydrogen. (Author)

Esin, O. A. and Sryvalin, I. T.
STUDY OF PROPERTIES OF MOLTEN SULFIDES BY ELECTROMOTIVE METHOD I: SYSTEMS Pb-Pbs AND Cu-Cu_2S. [1962] 16p.
Order from K-H $20.00 K-H 3763 f

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1951, v. 25, no. 12, p. 1503-1511.

DESCRIPTORS: *Chemical analysis, Melting, *Sulfides, Electric potential, *Lead compounds, *Copper compounds.

Fastovskii, V. G. and Petrovskii, Yu. V.
INVESTIGATION OF THE LIQUID-VAPOR EQUILIBRIUM IN THE OXYGEN-KRYPTON SYSTEM. [1962] [7]p. 6 refs.
Order from OTS or SLA $1.10 62-20153

Trans. of Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1956, v. 30 [no. 3] p. 589-592.

DESCRIPTORS: *Krypton, *Oxygen, *Chemical equilibrium, Vapors, Liquids, *Liquefied gases, Mixtures.

Forcrand, R. de.
HYDRATES OF KRYPTON AND ARGON. [21 Dec 61] 5p. 2 refs.
Order from SLA $1.10 63-10112

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1923, v. 176, p. 355-358 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Argon, *Krypton, *Hydrates, Gases, Rare gases, Stereochemistry.

Frumkin, A. N.
ON THE VALUE OF ELECTROCHEMICAL METHODS TO INVESTIGATE THE PROPERTIES OF SURFACE COMPOUNDS. [1961] 6p. 3 refs. MDF F-119
Order from OTS or SLA $1.10 '62-19898

Trans. of mono. Poverkhnostnye Khimicheskie Soedineniya i Ikh Rol'v Yavleniyakh Adsorbtsii [Moscow] 1957, p. 53-58.
Another trans. is available from SLA as R-3749, 6p.

DESCRIPTORS: *Electrochemistry, *Oxygen compounds Surfaces, Oxides.

Fuks, G. I. and Kaverina, N. I.
THE INFLUENCE OF THE CATION RADIUS UPON THE PROPERTIES OF THE BOUNDARY LAYERS OF ELECTROLYTE SOLUTIONS IN FLAT GAPS BETWEEN QUARTZ SURFACES. [Vliyanie Radiusa Kationov na Svoistva Granichnykh Sloev Rastvorov Elektrolitov v Ploskikh Zazorakh Mezhdu Poverkhnostyami Kvartsa]. [1962] 10p. 19 refs.
Order from OTS or SLA $1.10 62-14553

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 121, no. 2, p. 322-325.
Another trans. is available from CB $5.00

DESCRIPTORS: *Quartz, Disks, Surface area, *Electrolytes, Boundary layer, *Ions, Surface properties, Coagulation.

Gomcharova, N. V., Voitekhov, A. A. and others.
INDIRECT METHODS OF DETERMINING THE RELATIVE ACTIVITY OF CATALYSTS, PT. I. [1962] [15]p. [Warren Spring Lab.] Trans. NT621; DSIR NLL M. 3609.
Order from OTS or SLA $1.60 62-25287

Trans. of Khim[iya i] Tekhnol[ogiya] Topliv i Masel (USSR) 1957 [v. 2, no. 1] p. 3-13.

DESCRIPTORS: *Catalysts, Reaction kinetics, Pressure, *Tungsten compounds, Sulfides, *Phenols, Hydrogenation.

Grebenshchikova, V. I., Bryzgalova, R. V., and Chernitskaya, I. V.
THE COMPOSITION AND SOLUBILITY OF LANTHANUM OXALATE IN DIFFERENT SOLUTIONS. [1962] 9p. 7 refs.
Order from OTS or SLA $1.10 62-18730

Trans. of #Radiokhimiya (USSR) 1961, v. 3, no. 4, p. 486-489.

DESCRIPTORS: *Lanthanum compounds, *Oxalates, Synthesis, Solubility, Chemical analysis.

It is determined that normal lanthanum oxalate, having the composition $La_2(C_2O_4)_3 \cdot 8H_2O$, is deposited from mixed solutions of nitric or oxalic acids (or ammonium oxalate) at 50°C. The solubility of lanthanum oxalate at 50°C in different solutions is determined. It is demonstrated that the solubility of $La_2(C_2O_4)_3 \cdot 8H_2O$ decreases from $5 \cdot 10^{-3}$ to $1.7 \cdot 10^{-4}$M when the oxalic acid concentration increases from 0.1 to 0.9M. The solubility curve of lanthanum oxalate in nitric acid and ammonium oxlate exhibits a minimum which implies formation of complex oxalate ions La^{3+} in the solution. (Author)

Hoffmann, E. G.
MOLECULAR SPECTROSCOPIE INVESTIGATIONS ON ORGANO-ALUMINUM COMPOUNDS. IV. ON THE SPECTROSCOPIC IDENTIFICATION OF THE ASSOCIATION OF COMPOUNDS OF THE TYPE ALR_3 AND ALR_2Cl. [1962] 28p.
Order from K-H $32.00 K-H-10486

Trans. of Zeitschrift für Elektrochemie (West Germany) 1960, v. 64, no. 5, p. 616-631.

DESCRIPTORS: *Molecular spectroscopy, Analysis, *Metalorganic compounds, Spectroscopy, *Aluminum compounds, Identification.

Ipat'ev, V. V. and Levina, M. I.
EQUILIBRIUM BETWEEN LIQUIDS AND GASES AT HIGH PRESSURES AND TEMPERATURES. II. SOLUBILITY OF GASES IN PETROLEUM PRODUCTS. [1962] [19]p. 19 refs.
Order from OTS or SLA $1.60 62-20122

Trans. of Khim[iya] Tverdogo Topliva (USSR) 1937, v. 8 [no. 10] p. 866-875.
Other translations are available from LC or SLA mi$2.70, ph$4.80 as 59-14126, F-TS-9670/V [1959] [22]p. and from SLA as R-02106, 12p.

DESCRIPTORS: *Solubility, *Gases, *Petroleum, Liquids, *Chemical equilibrium, Pressure, Temperature.

For abstract see Technical Translations 2:703, 1959.

Jander, Gerhart and Wendt, Hildegard.
FUNDAMENTALS OF A CHEMISTRY IN ABSOLUTE NITRIC ACID, I. 5 Dec 61, 21p. 25 refs.
Order from SLA $2.60 63-10559

Trans. of Z[eitschrift für] Anorg[anische] Chem[ie] (East Germany) 1948, v. 257, p. 26-40.

DESCRIPTORS: Chemistry, *Nitric acid, *Solvents, Solvates, Chemical properties, Complex compounds, Electrical conductance.

Khomyakov, V. G. and Tomilov, A. P.
EXAMPLES OF POSSIBLE APPLICATIONS OF ELECTROLYSIS OF ORGANIC COMPOUNDS IN INDUSTRY. [1962] [16]p. 72 refs.
Order from OTS or SLA $1.60 62-20371

Trans. of Khimicheskaya Promyshlennost' (USSR) 1959, no. 7, p. 566-573.

DESCRIPTORS: *Electrolysis, *Organic compounds, Industries, *Electrochemistry, Acetones, Anodes, Cathodes, Chemical engineering.

Several processes are examined whose accomplishment by the electrochemical method is of interest to industry. These include oxidation, displacement and free radical formation at the anode, and reduction of multiple C-C bonds, reduction of functional groups, halogen displacement by hydrogen and formation of free radicals at the cathode.

Klemenc, A.
NEW APPROACHES TO THE USE OF ELECTRICAL ENERGY IN CHEMICAL REACTIONS (GLOW DISCHARGE ELECTROLYSIS). [1962] 9p. 14 refs.
Order from SLA $1.10 62-20081

Trans. of Chimia (Switzerland) 1952, v. 6, p. 177-180.

DESCRIPTORS: *Electrolysis, *Glow discharges, *Chemical reactions, Electrochemistry.

Klibanova, Ts. M., Pomerantsev, V. V., and Frank-Kamenetskii, D. A.
DIFFUSION COEFFICIENTS OF GASES AT HIGH TEMPERATURES. [1962] [32]p. (figs. omitted) 7 refs.
Order from OTS or SLA $3.60 62-18273

Trans. of Zhurnal Tekhnicheskoi Fiziki (USSR) 1942, v. 12, no. 1, p. 14-30.

DESCRIPTORS: *Diffusion, *Gases, *High temperature research, Capillary tubes, Theory, Differential equations.

The diffusion coefficients of CO_2 in air at temperatures from 17° to 1260° C. and of H_2O in air at temperatures from 100 to 1200° C. were determined. The possibility of calculating the diffusion coefficients with the equation of Sutherland was confirmed. An empirical equation is given for determining the Sutherland constant of mixed gases from the constants for the pure gases.

Levi, Augusto.
INDICES OF REFRACTION AND MOLECULAR REFRACTIONS OF AQUEOUS NICOTINE SOLNS. [1962] 11p.
Order from K-H $13.75 K-H 5448 d

Trans. of R. Instituto Veneto di Scienze, Lettere ed Arti. Atti (Italy) 1915/1916, v. 75, no. 2, p. 465-479.

DESCRIPTORS: *Refractive index, Solutions, *Molecular spectroscopy, *Nicotine.

Levitskaya, E. P.
INVESTIGATIONS OF THE EQUILIBRIUM OF A TERTIARY LIQUID-VAPOR SYSTEM, ETHANE-METHANE-HYDROGEN [Issledovanie Ravnovesiya Zhidkost'-Par Troinoi Sistemy Etan-Metan-Vodorod]. [1962] [19]p. 9 refs.
Order from OTS or SLA $1.60 62-18807

Trans. of Zhur[nal] Tekh[nicheskoi] Fiz[iki] (USSR) 1941, v. 11, no. 3, p. 197-204.
Other translations are available from OTS or SLA $1.10 as 61-18036 [1961] 6p.; from ATS as RJ306, 12p. and in Dutch from OTS or ETC $1.85 as 61-17751, MTWL-106, 16p.

DESCRIPTORS: *Ethanes, *Methanes, *Hydrogen, Liquids, Gases, Pyrolysis, Solubility, Temperature, Pressure, Vapors, Chemical equilibrium, Thermodynamics, Reaction kinetics.

The equilibrium of the liquid-vapor binary system ethane-methane was studied at temperatures of -85° and -95°C. and at pressures of 30 and 40 atm., and the results are compared with the data of Ruhemann. The equilibrium compositions of the liquid and gas phase of the tertiary system ethane-methane-hydrogen were studied at the temperatures -85°, -95°, -105° and -115°C. and pressures of 30, 40 and 80 atm. The experimental data may be used for designing apparatus for the separation of pyrolysis gas. (Author)

Martin, H.
FORMATION REACTIONS OF NITROXYCHLORIDE. 28 July 61, 6p. 7 refs.
Order from SLA $1.10 63-10572

Trans. of Angewandte Chemie (West Germany) 1958, v. 70, no. 4, p. 97-98.

DESCRIPTORS: *Chemical reactions, *Nitrogen compounds, *Oxychlorides, Condensation reactions, Distillation, Dynamics, Equations, *Chlorides.

Martin, H. and Köhnlein, E.
THE GAS REACTION NOCl + ClO_2. 24 July 61, 1p.
Order from SLA $1.10 63-10621

Trans. of Angewandte Chemie (West Germany) 1955, v. 67, no. 17/[18] p. 524.

DESCRIPTORS: Gases, *Chemical reactions, Nitrogen compounds, *Oxychlorides, *Chlorine compounds Dioxides, *Chlorides.

Neiman, M. B. and Feklisov, G. I.
INVESTIGATION OF OXIDATION OF 1-C^{14}- BUTANE AND THEORY OF DESTRUCTIVE OXIDATION (Issledovanie Okisleniya 1-C^{14}- Butana i Teoriya Destruktivnogo Iksileniya). [1954] 5p. 7 refs. Fuel Research Station NT 303; [DSIR] NLL M. 4805.
Order from OTS or SLA $1.10 62-24861

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1953, v. 91, no. 4, p. 877-880.

DESCRIPTORS: *Butanes, *Oxidation, Theory, Combustion, Reaction kinetics, Deposits.

Nikitin, E. E.
THE MECHANISM OF INTERMOLECULAR EXCHANGE OF ENERGY IN THE DISSOCIATION OF A DIATOMIC GAS. [1962] 10p. 13 refs.
Order from OTS or SLA $1.10 62-18298

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 132, no. 2, p. 395-398.

DESCRIPTORS: *Molecular association, Energy, *Dissociation, *Gases, Excitation, *Shock waves, Absorption, Reaction kinetics, Quantum mechanics.

Overbeek, J. Th. G.
THERMODYNAMICS OF MICELLE FORMATION. Paper given at the Symposium on Solubilisation and Emulsions, Utrecht, 17-18 Apr 58. [1962] 12p. (figs. omitted) 31 refs.
Order from SLA $1.60 63-10733

Trans. of Chemisch Weekblad (Netherlands) 1958, v. 54, p. 687-691.

DESCRIPTORS: *Thermodynamics, *Colloids, Soaps, *Entropy, Chemical equilibrium, Thermochemistry.

Pawlikowski, S.
SEPARATION OF EMULSIONS WITH HIGH TENSION ALTERNATING CURRENT. [1962] 30p. (figs. omitted) 14 refs.
Order from SLA $2.60 63-10697

Trans. of Przemysl Chem[iczny] (Poland) 1928, v. 12, p. 501-525.

DESCRIPTORS: *Colloids, Electrical equipment, *Alternating current, Kerosene, Sulfuric acid, Experimental data, Separation.

Rapid coagulation of emulsion is dependent upon unevenness of the electric field. Small drops of emulsion are drawn into the area of the greatest concentration of the lines of forces of the electric field and there they undergo coagulation. Only in certain and very simplified cases was it possible to find the optimum conditions for the deformation of the field whether by the introduction of crevices or by drilling small holes of different diameters in the electrodes. The result of coagulation is a function of the electrical potential used and this phenomenon was explained by proving that a secondary dispersion of the already coagulated dispersed phase can take place at the electrodes.

Platonova, M. N.
CURRENT EFFICIENCY OF ANODIC SOLUTIONS OF GERMANIUM. [1962] 6p. 9 refs.
Order from OTS or SLA $1.10 62-20225

Trans. of #Zhurnal Prikladnoi Khimii (USSR) 1962, v. 35, no. 2, p. 334-337.

DESCRIPTORS: Electrochemistry, Solutions, *Germanium, *Electrolytes, Anodes (Electrolytic cell), Semiconductors.

Ruff, O. and Foerster, E.
[OPERATIONS] IN THE [RANGE] OF HIGH TEMPERATURES. XVI. CALCIUM CARBIDE: ITS FORMATION AND DECOMPOSITION. [1962] 34p. 16 refs.
Order from SLA $3.60 62-20195

Trans. of Zeitschr[ift für] Anorg[anische] Chem[ie] (Germany) 1923, v. 133, p. 321-347.

DESCRIPTORS: *Calcium compounds, Decomposition, Fused materials, High temperature research, *Carbides, Preparation, Nitrogen, Hydrogen, Water vapor, Carbon compounds, Monoxides, Vapor pressure, *Thermochemistry.

The question of the existence of a second carbide, possibly CaC, is answered in the negative on the basis of gas-analytical investigations. Using a high-purity carbide which had been prepared by various methods from calcium and carbon the dissociation pressure and the vapor composition of calcium carbide have been measured. The measurements show that the dissociation pressure of carbide reaches 1 atmosphere only at about 2500°C and that the vapor consists of calcium and small amounts of CaC_2. The residue is graphite. The softening temperatures of mixtures of CaC_2 and CaO were determined. It was shown that the mixture with the lowest melting point contains about 30% CaO and softens at ~1640°. The melting point of pure carbide is in the vicinity of 2300°C. The various observations on the formation of CaC_2 from CaO and carbon were combined into a more systematic treatment of the subject. (Author) (See also 60-14487)

Samsonov, G. V. and Grodshtein, A. E.
SOME PROPERTIES OF THE ALKALINE AND RARE EARTH METAL HEXABORIDES. [1962] [6]p. 19 refs.
Order from OTS or SLA $1.10 62-20149

Trans. of Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1956, v. 30 [no. 2] p. 379-381.

DESCRIPTORS: *Borides, *Rare earth elements, *Alkaline earth elements, Boron compounds, Structural properties.

The hexaborides of Ce, La, Ba and Ca were prepared by a vacuum-thermal method. On the basis of a tensimetric analysis of the reaction $2CeO_2 + 3B_4C + C = 2CeB_6 + 4CO$ it was established that this reaction proceeds in several stages involving the intermediate formation of the lower oxides of cerium Ce_4O_7 and Ce_2O_3, and the heats of formation of these oxides as well as that of Ce hexaboride were determined approximately. The specific weights, the microhardness values, the coefficients of thermal expansion, the resistivity, the thermoemissive characteristics and the lattice periods of the hexaborides of Ce, La, Ba and Ca were determined. It was shown that these properties are related to the peculiarities of the electronic structure of the hexaborides. (Author)

Stackelberg, M. v.
SOLUBILITY OF KRYPTON AND XENON IN LIQUID OXYGEN. [1962] [13]p. 4 refs.
Order from SLA $1.60 62-20080

Trans. of Z[eitschrift für] Physik[alische] Chem[ie, Leipzig] (Germany) 1934, v. 170A, p. 262-272.

DESCRIPTORS: *Liquid oxygen, *Xenon, *Krypton, Solubility.

The solubilities of solid krypton and xenon in liquid oxygen have been determined for the temperature range of 70° to 90°K. The saturation points were obtained from vapor pressure measurements. It was found that the actual solubilities were smaller than the solubilities calculated from the heats of fusion of the rare gases assuming ideal behavior of the systems. For this reason, the heats of solution of the rare gases in O_2 must be larger than their heats of fusion, i.e., heat must be consumed in the mixing of the liquid components of the systems. These heats of mixing were calculated from the experimentally determined saturation points. The vapor pressure measurements showed, in agreement with the sign of the heats of mixing, that the O_2-partial pressures are larger than would correspond to Raoult's Law. The complete crystallization curve and the eutectic point of the O_2-Kr system has been calculated with the aid of the heats of fusion and of mixing. (Author)

Sultanov, M. Yu. and Belen'kii, M. S.
EFFECT OF COMPOSITION ON THE PROPERTIES OF COPPER-CHROMIUM OXIDE CATALYSTS IN THE OXIDATION OF CARBON MONOXIDE. [1963] 8p.
Order from ATS $9.85 ATS-96Q66R

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. Neft' i Gaz (USSR) 1962, v. 5, no. 9, p. 63-69.

DESCRIPTORS: *Carbon compounds, *Monoxides, *Oxidation, Copper catalysts, *Catalysts, Chromium compounds, Oxides, Gases.

Tsentsiper, A. B., Eremin, E. N., and Kobozev, N. I.
COMPARATIVE STUDY ON REACTION KINETICS OF ACETYLENE CONVERSION OF VARIOUS HYDROCARBONS BY ELECTRIC DISCHARGE IN A STATIC SYSTEM. [1962] 6p. 5 refs.
Order from OTS or SLA $1.10 62-20393

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 141 [no. 1] p. 117-120.
Another trans. is available from ICE in v. 2, no. 3, $15.00/year.

DESCRIPTORS: *Hydrocarbons, Methanes, Ethanes, Propanes, Propenes, Decomposition, *Acetylenes, Reaction kinetics, *Electric arcs, *Electric discharges.

EARTH SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 116 (EARTH SCIENCES SERIES). 28 Mar 63 [10]p. JPRS-18415.
Order from OTS $0.50 63-21447

Abstract trans. of Natura (Rumania) 1963, v. 15, no. 1, 3-72.

DESCRIPTORS: *Abstracts, *Rumania, Earth, Science, Geology, Geography, *Geophysics.

DOKLADY OF THE ACADEMY OF SCIENCES OF THE USSR, EARTH SCIENCES SECTION, 1961, VOL. 136, NOS. 1-6. Sep 62, 1v.
Order from AGI $8.00, $45.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 136, no. 1, p. 84-87, 163-201, 206-210; no. 2, p. 408-440, 445-452; no. 3, p. 587-590, 678-703; no. 4, p. 810-812, 889-923, 931-941; no. 5, p. 1066-1072, 1168-1212; no. 6, p. 1328-1330, 1411-1457.

DESCRIPTORS: *Geochemistry, *Geology, *Geophysics, *Hydrology, *Minerals, *Paleoecology, *Petrology.

METEOROLOGY AND HYDROLOGY, 1963, NO. 1: [SELECTED] TRANSLATIONS. 25 Mar 63 [59]p. 49 refs. JPRS: 18306.
Order from OTS $1.50 63-21397

Trans. of Meteorologiya i Gidrologiya (USSR) 1963, no. 1, p. 3-24, 47, 53-55, 59-62.

DESCRIPTORS: *Meteorology, *Hydrology, Stratosphere, Rockets, Statistical analysis, *Entropy, *Radiation measurement systems, Radiosondes, *Telemeter systems, Oceanology, *Conferences, *Indian Ocean, *Antarctic regions, Thermal radiation, Atmospheric sounding, *Sounding rockets.

Contents:
Investigation of the stratosphere in the USSR by means of meteorological rockets, by I. A. Khvostikov and others
'Statistical entropy as an index of similarities or differences of meteorological fields, by N. A. Bagrov
The quantitative method for determining the date of the beginning of a natural synoptic period, by S. T. Pagava
Decrease in radiation errors when measuring air temperature with the RKZ-1A radiosonde, by G. N. Kostyanoi and A. I. Kruglova
Telemetry in foreign oceanography, by V. M. Lifshits
At the main administration of the hydrometeorological service
At the institutes of the main administration of the hydrometeorological service
Conferences, meetings and seminars
International expedition in the Indian Ocean
Concerning Antarctic
Notes on international scientific life.

Chou, Yu-wu and Tu, Yung-huang.
PRELIMINARY STUDIES ON FROZEN EARTH ON THE TSINGHAI-TIBETAN PLATEAU. 2 Apr 63 [18]p. JPRS: 18511.
Order from OTS $0.50 63-21486

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1963, no. 2, p. 60-63.

DESCRIPTORS: *Ice, *Soils, Freezing, Soil mechanics, Structures, Terrain, Temperature.

Chukhrov, F. V. and Anosov, F. Ya.
ON THE NATURE OF CHRYSOCOLLA (O Prirode Khrizokoll). Sep 62 [15]p. 10 refs. RTS 2140.
Order from OTS or SLA $1.60 62-32960

Trans. of Vsesoyuznoe Mineralogicheskoe Obshchestvo. Zapiski (USSR) 1950, v. 79, no. 2, p. 127-136.

DESCRIPTORS: *Minerals, Montmorillonite, Chemical analysis, Crystal structure, X-ray diffraction analysis, Molecular properties, Decomposition.

Investigation of cupriferous beidellite ('medmontite') from the Dzhezkazgan deposit in Kazakhstan to the conclusion that in this mineral aluminium in octahedral co-ordination is partly substituted by copper. This has led to the supposition that the minerals of the montmorillonite are ismorphous. It is obvious that if we admit the substitution of aluminium by copper in montmorillonites we must also admit the reverse substitution of copper by aluminium in chrysocollas. With complete replacement of copper by aluminium the anhydrous molecule of chrysocolla would acquire the form Al_2O_3. Center vertically $3SiO_2$, which corresponds to the ratio of silicon dioxide to aluminium oxide in true beidellite. The actual data are considered which refer to common structures of the chrysocolla and the montmorillonite groups. (Author)

Samoilov, I. V.
THE DEVELOPMENT OF LIMNOLOGY AND HYDROCHEMISTRY IN CHINA. 25 Mar 63 [47]p. 27 refs. JPRS: 18323.
Order from OTS $1.25 63-21405

Trans. of Hai Yang Yü Hu Chao (Chinese People's Republic) 1958, v. 1, no. 2, p. 153-166.

DESCRIPTORS: *Hydrology, *Chemistry, *China, *Lakes, Water, Physical properties, Chemical properties, Biological assay.

Climatology and Meteorology

Belousov, S. L.
ON THE INVESTIGATION OF THE ERRORS OF THE NUMERICAL SOLUTION OF THE EQUATION OF TRANSFER OF VORTICITY IN THE MIDDLE LAYER OF THE ATMOSPHERE, tr. by T. C. Marwick. [1962] [16]p. (figs. formulae omitted) 3 refs. Trans. no. 72; [DSIR] NLL M. 3119.
Order from OTS or SLA $1.60 62-24885

Unedited trans. of [Tsentral'nyi Institut Prognozov]. Trudy (USSR) 1958, v. 78, p. 73-82.

DESCRIPTORS: *Weather forecasting, *Atmosphere, *Fluid dynamics, Vortices, Equations, Numerical analysis, Errors.

Chang Chi-chia.
LONG PERIOD CHANGE OF CERTAIN METEOROLOGICAL ELEMENTS AND OF THE FREQUENCY OF TYPHOONS OVER CHINA, AND THEIR CONNECTION WITH (VANGENGEJM'S) CIRCULATION FORMS W, C, E. 12 Jan 61, 9p. (figs. omitted) 5 refs. [DSIR] NLL M. 3108.
Order from OTS or SLA $1.10 62-24893

Unedited trans. of Glavnaya Geofizicheskaya Observatoriya, Leningrad. Trudy (USSR) 1960, no. 90[152] [p. 63-78].
Another trans. is available from OTS $1.00 as 61-31124, JPRS-9141, 15 May 61, 39p.

DESCRIPTORS: *Weather forecasting, *Storms, *Tropical cyclones, Atmospheric motion, *China, Pacific Ocean.

For abstract see Technical Translations 6: 163, 1961.

Chang Chia-ch'eng.
SOME OPINIONS ON THE NATURE OF MONSOONS IN CHINA. 4 Jan 61, 12p. (figs. omitted) 16 refs. [DSIR] NLL M. 3109.
Order from OTS or SLA $1.60 62-24895

Unedited trans. of Glavnaya Geofizicheskaya Observatoriya, Leningrad. Trudy (USSR) 1960, no. 90[152] [p. 27-42].
Another trans. is available from OTS $1.25 as 61-31113, JPRS-9139, 15 May 61, 41p.

DESCRIPTORS: *Storms, Wind, *Jet streams (Meteorology), Theory, *China.

For abstract see Technical Translations 6: 163, 1961.

Nikandrov, V. Ya.
USE OF HYDROSCOPIC SALTS IN ANTIHAIL ROCKETS. [1962] 3p.
Order from ATS $4.00 ATS-13P65R

Trans. of Gl[avnaya] Geofiz[icheskaya] Observ[atoriya, Leningrad]. Tr[udy] (USSR) 1962, no. 126[188] p. 8-9.

DESCRIPTORS: *Sounding rockets, Artificial precipitation, *Hail, Salts, Moisture, Rockets.

Pagava, S. T., Aristov, N. A. and others.
THE INFLUENCE OF THE NORTH ATLANTIC ON THE DEVELOPMENT OF SYNOPTIC PROCESSES, tr. by 1963, 66p. 33 refs. PL-480 Comm.
Order from OTS $0.75 61-11466

Trans. of mono. Vliyanie Severnoi Atlantiki na Razvitie Sinopticheskikh Protsessov, Moscow, 1958 [71p.].

DESCRIPTORS: *Heat transfer, *Atlantic Ocean, *Atmosphere, Correlation techniques, Weather forecasting, Meteorology, *Climatology, Meteorological parameters, *Marine meteorology.

This book presents the results of an investigation into some aspects of the ocean-atmosphere interaction. A relationship is traced between the heat given up by the water to the air and thermal processes in the atmosphere. The nature of heat exchange over a natural synoptic period between the ocean surface waters and the atmosphere is clarified. The influence of the conditions of water-air heat exchange in the North Atlantic upon the air temperature over Europe is analyzed. Prognostic conclusions are drawn which may be of use in the preparation of long-range forecasts at short notice. Characteristic diurnal water- and air-temperature data are also given. The book has been prepared for a wide circle of meteorologists and climatologists, primarily for scientific and operational staff engaged on long-range forecasting. (Author)

Vorontsov, P. A.
MAGNITUDE OF THE VERTICAL TEMPERATURE GRADIENT IN THE FRICTION LAYER OF THE ATMOSPHERE ABOVE VARIOUS UNDERLYING SURFACES. [1962] [28]p. 10 refs. [CSIRO Trans. no.] 5930.
Order from OTS or SLA $2.60 62-32360

Trans. of [Glavnaya Geofizicheskaya Observatoriya, Leningrad. Trudy] (USSR) 1956, no. 63(125) p. 32ff.

DESCRIPTORS: Temperature, Friction, *Atmosphere, Geophysics, Meteorological parameters, *Atmospheric temperature, Diurnal variations, Periodic variations.

The magnitudes of γ in the lowest 500 m layer over various underlying surfaces are examined, using observational material from both expeditions and fixed stations. The nature of the underlying surface, the region of observation and the period and number of measurements are presented. (Author)

Geodesy

Bursa, Milan, Chuboda, Vratislaw and others
WORK IN GRAVIMETRY IN CZECHOSLOVAKIA: ASTROGRAVIMETRIC LEVELING IN CZECHOSLOVAKIA [AND] MEASUREMENTS WITH THE GS-12 GRAVIMETER IN THE CZECHOSLOVAK GRAVIMETRIC NETWORK. 21 Mar 63 [8]p. JPRS: 18266.
Order from OTS $0.50 63-21380

Partial trans. (Russian summaries only) of two articles from Geofysikalni Sbornik (Czechoslovakia) 1960, nos. 126/145.

DESCRIPTORS: *Gravity, Gravimeters, *Astronomical geodesics, *Czechoslovakia, Measurement.

Dubyago, D. I.
RELATIVE DETERMINATIONS OF GRAVITY IN THE URALS AND ALONG THE VOLGA MADE BY THE ASTRONOMICAL OBSERVATORY OF KAZAN' UNIVERSITY IN 1899-1900 AND 1902. [1962] [13]p. ACIC RR-46.
Order from OTS or SLA $1.60 62-25453

Trans. of [Gosudarstvennoe] Geograficheskoe Obshchestvo. Izvestiya (USSR) 1903, v. 39, no. 4, p. 295-304.

DESCRIPTORS: *Gravity, Measurement, Oscillation, Astronomical geodesics, Gravimeters.

Gorbunov, N. P. and Shcherbakov, D. I.
THE 1928 SOVIET-GERMAN HIGH ALTITUDE EXPEDITION IN THE PAMIRS [SELECTED PARTS]. [1962] [41]p. ACIC RR-30.
Order from OTS or SLA $4.60 63-13561

Trans. of mono. Pamirskaya Ekspeditsiya 1928 (The Pamir Expedition of 1928) n. p., 1929, v. 1, p. 1-13; 39-48 and 55-56.

DESCRIPTORS: Germany, *High altitude, *Exploration, Scientific organizations, Instrumentation, Terrestrial magnetism, Surveying.

Contents:
Organization of the expedition
Tasks of the Pamir expedition and its scientific equipment
Completed work and basic results
Work of the magnetic group.

Gorshkov, P. M.
GRAVIMETRIC SURVEY OF THE KUZBAS AND GORNAYA SHORIYA IN 1931. [1962] [40]p. 1 ref. ACIC RR-32.
Order from OTS or SLA $3.60 62-25430

Trans. of Akademiya Nauk SSSR. Sovet po Izucheniyu Proizvoditel'nykh Sil. Trudy: Seriya Kuzbasskaya, 1932, v. 1, p. 1-28.

DESCRIPTORS: *Gravity, *Surveying, Geophysics, Geological survey, Astronomical geodesics, Acceleration.

Simonenko, T. N. and Timofeev, A. N.
ON THE COMPUTATION OF THE VALUE OF Za BY MEANS OF THE MEASURED VALUE ΔT [AND] ON THE METHOD OF CHARACTERISTIC POINTS. [1962] [28]p. 9 refs. ACIC LD-48.
Order from OTS or SLA $2.60 62-25425

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geoficheskaya, 1956, no. 6, p. 704-707 and 712-721.

DESCRIPTORS: Mathematical analysis, Magnetic fields, *Numerical methods and procedures, Measurement, Integral equations, Gravity, *Terrestrial magnetism, Potential theory, *Gravity anomalies.

Stepanov, P. F. and Parrot, F.
LIST FOR POINTS IN KARS REGION, DETERMINED BAROMETRICALLY IN 1881 [AND] OBSERVATIONS MADE BY PROFESSOR F. PARROT OF THE OSCILLATION OF THE CONSTANT PENDULUM AT DORPAT, TIFLIS AND ON A SLOPE OF BOL'SHOI ARARAT (IN THE MONASTERY OF ST. YAKOV (ST. JACOB) IN 1829 AND 1833). [1962] [20]p. 5 refs. ACIC RR-44(A-B).
Order from OTS or SLA $1.60 62-25446

Trans. of [Gosudarstvennoe] Russkoe Geograficheskoe Obshchestvo. Kavkazskii Otdel. Izvestiya, 1882/1883, v. 7, p. 187-188 and p. 233-244.

DESCRIPTORS: *Barometers, *Oscillation, Clocks, Meteorological parameters, *Triangulation, Astronomical geodesics.

Urmaev, N. A.
ADJUSTMENT METHODS OF THE FIRST ORDER TRIANGULATION. [1962] [51]p. ACIC RR-14.
Order from OTS or SLA $5.60 62-25416

Trans. of Tsentral'nyi Nauchno-Issledovatel'skii Institut Geodezii, Aeros"emki i Kartografii. Trudy (USSR) 1937, v. 19, p. 5-34.

DESCRIPTORS: *Triangulation, Errors, Corrections, Least squares method, Geodesics, *Astronomical geodesics.

Zhongolovich, I. D. and Kulikov, D. K.
CONDITIONS OF APPLICATION OF STOKES' CLASSIC FORMULA [AND] THE USE OF ANALYTICAL COMPUTERS FOR MULTIPLYING TRIGONOMETRIC SERIES. [1962] [31]p. 18 refs. ACIC RR-40-(F-G).
Order from OTS or SLA $3.60 62-25441

Trans. of Akademiya Nauk SSSR. Institut Teoreticheskoi Astronomii. Byulleten' 1949, v. 4, no. 6(59) p. 270-286.

DESCRIPTORS: *Computers, *Numerical methods and procedures, Determination, Earth, Geometric forms, *Trigonometry, *Series, *Geodesics, Gravity anomalies.

Geography

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 52 (GEOGRAPHY SERIES). 2 Apr 63 [36]p. JPRS: 18489.
Order from OTS $1.00 63-21473

Trans. of selected abstracts from Referativnyi Zhurnal. Geografiya (USSR) 1962, nos. 9-11.

DESCRIPTORS: *Abstracts, *China, Mapping, Hydrology, Terrain, *Geography, Ecology, Anarctic regions.

COMMUNISTS CHINA'S SCIENCE AND TECHNOLOGY: [SELECTED] TRANSLATIONS NO. 23. 4 Apr 63 [122]p. 4 refs. JPRS: 18558.
Order from OTS $2.75 63-21507

Trans. of Ti Li Hsüeh Pao (Chinese People's Republic) 1960, v. 26, no. 1, p. 1-8, 13-22, 34-60, 71-72.

DESCRIPTORS: *Geography, *Scientific research, *Conferences, *China, Geology, Climatology, Hydrology, Geochemistry, Economics, Cartography, *Terrain, *Deserts, Soil mechanics, Agriculture, Forestry, Grasses, *Glaciers, Water, *Mountains, Erosion, Swamps, Rural areas.

Contents:
Concluding report of the 1960 National Congress of Geographical Sciences, by Chu K'o-chen
A preliminary inquiry on some problems of forest, grazing and agricultural arrangements in sandy areas of China, by Wu Yu-jen
Natural topography of the Hsiao T'eng Ko Li sands in the inner monogolian autonomous republic, by Ch'en Ching-sheng (summary)
Some characteristics of the Muztagh and Kungur glaciers and the conditions for development of their utilization, by Tsui Chih-chiu
Preliminary classification of Karst mountain patterns in South China, by Tseng Chao-hsuan and others.
Some experience in demarcation of regions in Hopei province and its neighboring areas, by Lin Chao
Summary of discussions during the 1960 National Congress of Geographical Sciences on Synthetic Natural Regions.

Geology

A REGIONAL STRATIGRAPHIC TABLE OF CHINA (DRAFT). 4 Apr 63 [516]p. 885 refs. JPRS: 18539.
Order from OTS $7.00 63-21499

Trans. of mono. Chung Kuo Chu Yu Ti Ts'eng Piao, Peking, 1958, 190p.

DESCRIPTORS: *Stratigraphy, Petrology, *Geological survey, Geologic age determination, Paleoecology, *China, Geology, Tables.

Andreev, B. A.
THE COMPUTATION OF THREE-DIMENSIONAL DISTRIBUTION OF POTENTIAL FIELDS AND THEIR USE IN GEOPHYSICAL PROSPECTING, III. [1962] [21]p. 8 refs. ACIC LD-48.
Order from OTS or SLA $2.60 63-13565

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1952, no. 2, p. 22-30.

DESCRIPTORS: Numerical analysis, Distribution, *Potential theory, Functions, Geophysics, *Geophysical prospecting, *Algebra, Integral equations, Terrestrial magnetism, Gravity.

Berdichevskii, M. N. and Petrovskii, A. D.
PROCEDURES OF BILATERAL EQUATORIAL ELECTRICAL SURVEYING (Metodika Vypolneniya Dvustoronnikh Ekvatorial'nykh Zondirovanii). [1962] [32]p. (foreign text included) 4 refs.
Order from OTS or SLA $3.60 62-14580

Trans. of Prikladnaya Geofizika (USSR) 1956, no. 14, p. 97-114.

DESCRIPTORS: Surveying, *Geophysical prospecting, *Electrical equipment.

Boikova, K. A.
SOME SPECIES OF THE RUGOSA AND TABULATA CORALS FROM THE DEPOSITS OF THE UPPER DEVONIAN, THE RUSSIAN PLATFORM. [1962] 13p. (4 figs. omitted) 10 refs.
Order from OTS or SLA $1.60 62-23743

Trans. of [Paleontologicheskii Sbornik (USSR) 1954, no. 1, p. 44-51].

DESCRIPTORS: *Paleoecology, Deposits, Geology, Marine geology, Classification.

Bonet, Frederico.
THE URGONIAN FACIES OF THE MIDDLE CRETACEOUS IN THE REGION OF TAMPICO. [1962] [159]p. 24 refs.
Order from SLA $11.50 62-20276

Trans. of Asociación Mexicana de Geologos Petroleros. Boletin, 1952, v. 4, p. 153-262.

DESCRIPTORS: *Mexico, *Geological survey, Geologic age determination, *Limestone, *Paleoecology, *Stratigraphy, Geophysical prospecting, Geology

Dakhnov, V. N.
ALLOWANCE FOR THE EFFECT OF CLAY ON DETERMINATION OF THE OIL-AND-GAS SATURATION COEFFICIENT BY MEANS OF RESISTIVITY LOGGING DATA. [1962] 8p. 2 refs.
Order from OTS or SLA $1.10 62-20295

Trans. of #Geologiya Nefti i Gaza (USSR) 1960, v. 4, no. 12, p. 21-24.
Another trans. is available from ATS $7.30 as ATS-11N50R [1961] 5p.

DESCRIPTORS: *Clays, Petroleum, Natural gas, Geophysical prospecting.

Ivanov, A. A. and Levitskii, Yu. F.
GEOLOGY OF HALIDE BEDS (FORMATIONS) OF THE USSR. [1962] [52]p.
Order from OTS or SLA $5.60 62-20300
Trans. of Vsesoyuznyi Geologicheskii Institut. Trudy (USSR) 1960, v. 35, p. 376-402 and 423.

DESCRIPTORS: Deposits, *Halides, *Geology, Stratigraphy, Paleoecology, Geological time.

Pilatovskii, V. P.
ON THE APPLICATION OF SOME CONTOUR INTEGRALS IN PROBLEMS OF FORCE FILTRATION OF AN INCOMPRESSIBLE LIQUID TO WELLS (O Primenenie Nekotorykh Konturnykh Integralov v Zadachakh Napornoi Fil'tratsii Neszhimaemoi Zhidkosti k Skvazhinam). [1962] [9]p. (foreign text included) 7 refs.
Order from OTS or SLA $1.10 62-16440

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 110, no. 5, p. 742-745.

DESCRIPTORS: Liquids, *Liquid filters, Permeability, Viscosity, Petroleum, Sources, *Fluid mechanics, Mathematical analysis, *Integrals, Functions.

Sokolov, V. A.
THE ORIGIN OF PETROLEUM AND RADIOACTIVITY. [1962] [11]p. 8 refs.
Order from OTS or SLA $1.60 62-16673

Trans. of International Geological Congress (no. 17) Moscow, 1937. Report, 1950, v. 4, p. 343-350.

DESCRIPTORS: *Petroleum, *Radioactivity, *Methanes, Ionization, Diffusion, Geochemistry, Geophysical prospecting, Natural radioactivity, Geology.

Oceanography

OCEANOLOGY, 1962 [VOL. 2] NO. 2: [SELECTED] TRANSLATIONS. 28 Mar 63 [36]p. 18 refs.
JPRS: 18400.
Order from OTS $1.00 63-21438

Trans. of Okeanologiya (USSR) 1962 [v. 2] no. 2, p. 293-304 and 368-371.

DESCRIPTORS: *Oceanology, Microorganisms, Azotobacter, Indian Ocean, Antarctic regions, Aral Sea, Scientific organizations, Fisheries, Vietnam.

Contents:
On the problem of heterotrophic organism distribution in the Indian Ocean and Antarctic waters, by A. N. Bogoyavlenskii
On the question of the productivity of the Aral Sea, by E. A. Yablonskaya and N. K. Lukonina
Oceanographic work of the Pacific marine fisheries and Oceanography institute's Soviet-Viet Nam scientific exploratory expedition, by I. P. Dolgikh and N. A. Shurunov.

Batalin, A. M.
AN ATTEMPT TO CALCULATE THE HEAT BUDGET OF THE BERING SEA (Opyt Rascheta Teplovogo Balansa Beringova Morya) tr. by M. Slessers. 1962 [22]p. 18 refs. HO Trans-144.
Order from OTS or SLA $2.60 62-24070

Trans. of [Akademiya Nauk SSSR]. Okeanograficheskaya Komissiya]. Trudy, 1960, v. 7, p. 23-26.

DESCRIPTORS: Determination, Heat, *Bering Sea, Pacific Ocean, *Heat transfer, Evaporation, Ice, Melting, Atmosphere, *Thermal radiation, Solar radiation.

The components of the heat budget for the Bering Sea are discussed and appraised, comparing the situation with the Sea of Okhotsk in order to characterize the individual features of the Bering Sea heat content. The quantity of solar heat absorbed by the sea is determined on the basis of the known Savinov-Angström-Kimball relationships with the aid of Ukraintsev's tables. The quantity expressed in calories per unit surface by months and a year is compared with the quantity of heat obtained as a result of water exchange between the Bering Sea and the Pacific Ocean, taking into consideration the losses and gains of heat caused by evaporation, ice melting and freezing, condensation

of water vapor, convective-turbulent heat exchange between the sea and atmosphere and other phenomena. The interrelationships of the components are expressed by formulas defining their significance and amount in the heat balance of the Bering Sea by years, seasons and months. The typical values are tabulated. In addition, monthly and yearly differences of heat content among the various areas of the Bering Sea are pointed out, indicating the major contributing factors, such as the influx of warm waters by various branches of the Kuroshio and other currents, the wind pattern, ice drift and melting, etc. (Author)

Khailov, K. M.
SOME UNKNOWN ORGANIC SUBSTANCES OF SEA WATER (Nekotorye Neizvestnye Organicheskie Veshchestva Morskoi Vody) tr. by A. Pingell. 26 Feb 63 [9]p. 14 refs. N R L Trans. no. 931.
Order from OTS $0.50 63-11580

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 147, no. 5, p. 1200-1203.

DESCRIPTORS: *Sea water, *Organic compounds, *Organic pigments, Marine biology, Biochemistry.

Sysoev, N. N., ed.
CONFERENCE ON OCEANOGRAPHIC INSTRUMENTS (AND OTHER ARTICLES) (Konferentsiya po Okeanograficheskoi Apparature) tr. by M. Slessers. 1962 [72]p. 10 ref. HO Trans-124.
Order from OTS or SLA $7.60 62-24066

Trans. of [Akademiya Nauk SSSR]. Okeanograficheskaya Komissiya. Byulleten', 1960, v. 4, 68p.

DESCRIPTORS: *Conferences, *Oceanographic equipment, Instrumentation, Oceanology, Optical equipment, Meteorological instruments, Hoists.

Contents:
Conference on Oceanographic Instruments, by B. L. Lagutin and N. N. Sysoev
The nomenclature of oceanographic instruments and equipment of small and large-scale productions, by N. N. Sysoev
Nomenclature of single order oceanographic instruments and equipment, by G. S. Ivanov
New models of oceanographic instruments devised for hydrometeorological service, by V. I. Efremychev
The design and improvement of oceanographic instruments in the Institute of Oceanography of the Academy of Sciences of USSR, by N. N. Sysoev
The oceanographic deep-water winches, by N. N. Sysoev
Some of the samples of foreign oceanographic equipment, by T. K. Maslennikova
The modern equipment for hydro-optical investigations, by M. V. Kozlyaninov

Physics of the Atmosphere

Fesenkova, V. G.
INVESTIGATION OF THE STRATOSPHERE BY MEANS OF PHOTOMETRIC ANALYSIS OF CREPUSCULAR RAYS (TWILIGHT) tr. by T. C Marwick. [1962] [19]p. (formulae figs. omitted). Trans. 43; [DSIR] NLL M.1934.
Order from OTS or SLA $1.60 62-25018

Trans. of Akad[emiya] Nauk [SSSR]. [Otdelenie Matematicheskikh i Estestvennykh Nauk]. Izv[estiya] 1934, no. 10, p. 1501-1515.

DESCRIPTORS: Atmosphere, *Stratosphere, *Twilight, Sky brightness, *Photometers.

Galkin, A. I.
SEASONAL FLUCTUATIONS OF DIURNAL VARIATIONS OF THE F2 LAYER IONIZATION DENSITY FROM DATA OBTAINED FROM SOME POLAR STATIONS (O Sezonnykh Variatsiyakh Sutochnogo Khoda Plotnosti Ionizatsii Sloya F2 Po Dannym Nekotorykh Polyarnykh Stantsii). Aug 61 [6]p. 2 refs. TIL/T.5246; [DSIR] NLL M. 3454.
Order from OTS or SLA $1.10 62-25359

Trans. of Sov[etskaya] Antarkt[icheskaya] Eksped[itsiya]. Inform[atsionnyi] Byul[leten'] (USSR) 1961, no. 25, p. 43-47.

DESCRIPTORS: *Ionosphere, Ionization, Density, Diurnal variations, Frequency, *Antarctic regions, *Arctic regions.

In order to study the laws governing the behaviour of the ionosphere layers in antarctic regions, attempts were made to compare data obtained at various stations. With the same object in view data obtained at some arctic stations were also examined. For analysis, median values of the critical frequencies of the F2 layer were taken and in a number of cases of cases the arithmetical means of the median values were taken over two summer months or four winter months. By this means it was possible to obtain average values of the critical frequencies, for the normal state of the ionosphere over a given point. (Author)

Elling, Wilhelm.
VIRTUAL REFLECTION HEIGHTS AND REFLECTION CAPACITY OVER TSUMEB, SOUTHWEST AFRICA, DETERMINED BY PULSES WITHIN THE FREQUENCY RANGE OF 350 TO 5600 KHZ, tr. by J. M. Sprecher. July 61, 25p. 12 refs.
Order from OTS or SLA $2.60 62-24061

Trans. of mono. [Scheinbare Reflexionshohen und Reflexionsvermogen der Ionosphare über Tsumeb, Sudwest-Afrika, Ermittelt mit Impulsen in Frequenzband von 350 bis 5600 KHZ, pub. by Max-Planck Institut für Aeronomie, Dec 60].

DESCRIPTORS: *Ionosphere, Reflection, High altitude, Electromagnetic waves, Frequency, Air mass analysis, Ranges (Distance).

Paul, Adolf K.
ACTIVE HIGH FREQUENCY SPECTROMETER FOR IONOSPHERIC ECHO SOUNDING. III. DETERMINATION OF THE REAL FROM THE VIRTUAL REFLECTION HEIGHT, tr. by J. M. Sprecher. [May 61] [7]p.
Order from OTS or SLA $1.10 62-24059

Trans. from Archiv der Elektrischen Übertragung (West Germany) 1960, v. 14, no. 10.

DESCRIPTORS: *High frequency, *Spectrum analyzers, *Atmospheric sounding, *Ionosphere, *Echo ranging, *Electron density, Reflection.

Rawer, Karl.
ACTIVE HIGH FREQUENCY SPECTROMETER FOR IONOSPHERIC SOUNDINGS. II. SELECTION OF ECHO SIGNALS IN THE PRESENCE OF NOISE [Aktive Hochfrequenz Spektrometer für Ionosphärische Echolotung. II. Selektion der Echozeichen aus dem Störpegel] tr. by I. M. Sprecher. Nov 60 [12]p.
Order from OTS or SLA $1.60 62-24058

Trans. of Archiv der Elektrischen Übertragung (West Germany) 1960, v. 14, p. 373-379.

DESCRIPTORS: *High frequency, *Spectrum analyzers, *Atmospheric sounding, *Ionosphere, *Noise, *Echo ranging, *Angle of arrival, Radio reception.

(See also 62-24059)

ENGINEERING

Buddenhorn, Friedrich.
METHOD FOR PROMOTING MINE SAFETY, tr. by G. E. 1 Oct 62, 2p.
Order from OTS or SLA $1.10 62-33779

Trans. of German patent 372, 648, cl. 783, gr. 1, pat. from 16 July 21, pub. 31 Mar 23.

DESCRIPTORS: *Mining engineering, Safety, Coal mines, *Fire safety.

Gumenyuk, V. S.
RESOLUTIONS OF THE COORDINATION COMMITTEE ON THE SUBJECT "STRENGTH OF THIN-WALLED CONSTRUCTIONS". 2 Jan 63, 8p.
FTD-TT-62-1624.
Order from OTS or SLA $1.60 63-15547

Unedited rough draft trans. of Prykladna Mekhanika (USSR) 1961, v. 7, no. 1, p. 110-112.

DESCRIPTORS: *Structural shells, Mechanical properties, Tensile properties, Elasticity, Plasticity.

Parfenov, V.
DEVELOPMENT OF ULTRACENTRIFUGES. 9 Apr 63 [5]p. JPRS: 18611.
Order from OTS $0.50 63-21539

Trans. from Pravda, Moscow (USSR) 1963, 19 Feb, p. 4.

DESCRIPTORS: *Ultracentrifuges, Design, Centrifuges.

Zhutautas, N. V.
A SPIRAL-BAND HEAT EXCHANGER. 9 Jan 63 [5]p. FTD-TT-62-292.
Order from OTS or SLA $1.10 63-15331

Unedited rough draft trans. of Russian patent 138259 (668191/28) 27 May 60.

DESCRIPTORS: *Heat exchangers, Design, Helixes.

A spiral-band heat exchanger is described which is composed of sections with spiral and axial channels for conveying two heat-exchanging media, differing in this, that, with the aim of uniformly distributing temperature differences in the axial channels of a section (improving the temperature regimes) and diminishing the weight and size of the device, each section represent a system of channels arranged in spiral loops in which one of the streams move from the center of the channel to the periphery with a consequent change in direction to the reverse. (Author)

Aeronautical Engineering

AIRWAYS PLANNING REPORT-BAGHDAD, 28 JAN 61. 11 Feb 61 [6]p. AF-1 460 182.
Order from OTS or SLA $1.10 62-25672

Trans. of unidentified rept. of joint civil-military committee.

DESCRIPTORS: *Civil aviation, *Air traffic, *Airports, Military facilities, *Navigational aids, *Conferences, *Iraq

A discussion of civil-military cooperation, terminal area procedures, airways systems, and navigation aids in Iraq.

Fridlender, Gavriil Oskarovich.
INERTIAL NAVIGATION SYSTEMS. 11 Mar 63 [236]p. 14 refs. JPRS: 18047.
Order from OTS $3.50 63-21291

Trans. of mono. Inertsial'nye Sistemy Navigatsii, Moscow, 1961 [p. 2-154].

DESCRIPTORS: *Inertial navigation, Theory, Inertial guidance, Instrumentation, Errors, Aircraft, Rockets, Spacecraft, *Space navigation, Automatic pilots

In this book the author has examined the principles which are the basis for inertial navigation systems, possible errors in systems of this kind, and he has briefly elucidated the operation of inertial systems in a closed circuit which includes the inertial system - autopilot - winged aircraft. He has also taken up the problem of special features in the application of inertial systems to future controlled interplanetary flight. (Author)

Maslennikov, M. M., ed.
HELICOPTER POWER PLANT (II): SELECTED ARTICLE BY A. V. MIKEROV ON THE COMPARATIVE EVALUATION OF SINGLE AND TWO-SHAFT HELICOPTER UNITS. [1962] [27]p. (foreign text included). [DSIR] NLL M.4667.
Order from OTS or SLA $2.60 63-15408

Trans. of mono. [Silovye Ustanovki Vertoletov: Sbornik Statei] (Power Units of Helicopters) Moscow] 1959, p. 5-17.
A partial trans. (conclusions of article only) is available from OTS or SLA $3.60 in 61-28468, DSIR NLL M.2697 [1961] [31]p.

DESCRIPTORS: Helicopters, *Helicopter engines, *Gas turbines, Helicopter rotors, *Exhaust gases.

The effectiveness (efficiency) of an engine of the two-shaft type assuming correct choice of rotor turbine can be somewhat higher than with a single-shaft turbine because it is possible to establish optimum rotor r.p.m. under flight conditions with the former. The transmission problem in the two cases is roughly the same, although it can be slightly simpler with the two-shaft engine. Control systems in the single and two-shaft cases are also roughly equivalent. With several engines, the two-shaft engine control system is slightly simpler. The response of single-shaft engines is more rapid than two-shaft engines. (Author)

Petrova, N., Kibardin, Yu., and M. Gallai.
SECRETS OF THE BLUE JET STREAM [AND] BARRIER OF THE UNKNOWN [Tainy Sinikh Strui [and] Bar'er Neizvestnostei]. 31 Oct 62 [29]p. (illus. omitted). FTD-TT-62-1304.
Order from OTS or SLA $2.60 63-13900

Unedited rough draft trans. of Znanie-Sila (USSR) 1962 [v. 37] no. 3, p. 12-15 and ##17-19.
##An abstract trans. is available from OTS or SLA $1.10 as 62-25153, AID-62-56, Apr 62, 3p.

DESCRIPTORS: *Hypersonic planes, *Rocket planes, Gliders, Aerodynamic configurations, Shock waves, *Parasite planes, Jet stream (Meteorology).

Two popularized articles dealing with flight in high-altitude rocket planes.

Chemical Engineering

CHEMICAL INDUSTRY, 1945, NO. 2: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 3p. 2 refs.
Order from OTS or SLA $1.10 62-10817

Abstract trans. of Khimicheskaya Promyshlennost' (USSR) 1945, no. 2, p. 7-13 and 19-20.

DESCRIPTORS: *Indexes, *Abstracts, *Petroleum, Desiccants, Gases, Sulfuric acid, Corrosion, Metals, Motion, Dehydration, Vegetable oils, Polyvinyl chloride, Towers (Chemistry).

Contents:
Drying of gases with sulfuric acid in packed towers, by A. G. Amelin and M. N. Sharov
Corrosion of metals in intensive operation of towers in manufacture of sulfuric acid, by S. D. Stupnikov
Movement of gas in hollow towers, by F. A. Kul'kov and E. L. Yakhontova
Effect of the conditions of dehydration of castor oil on the quality and quantity of the products, by I. T. Osnos and I. I. Golovistikov
Acid-resistant packing from polyvinyl chloride, by V. S. Chirkin.

CHEMICAL INDUSTRY, 1945, NO. 6: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 3p. 15 refs.
Order from OTS or SLA $1.10 62-10820

Abstract trans. of Khimicheskaya Promyshlennost' (USSR) 1945, no. 6, p. 7-12, 14-17 and 22-23.

DESCRIPTORS: *Indexes, *Abstracts, *Petroleum, Purification, Gases, Plastics, Stability, Bromine, Iodine, Esters, Canavanine, Chlorides, Butyrates.

Contents:
Purification and utilization of gases, by M. I. Suchkov and others
Raising the quality of resol resins, by G. S. Petrov
Chemical stability of materials in the manufacture of bromine and iodine, by Ts. A. Adzhemyan and others
Preparation of butyric anhydride and butyryl chloride by interaction of the acid with silicon tetrachloride, by K. D. Petrov and others.

MODIFIED POLYPROPYLENE AND PROCESS FOR ITS PRODUCTION. 27 Feb 63.
Order from TTIS $30.00 TTIS NS 65

Trans. of Belgian patent 611,792, by Shell Internationale Research Mij, appl. 2 Dec 61.

DESCRIPTORS: *Propenes, *Industrial production, *Polymers, *Polyethylene plastics.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1944, VOL. 44, NO. 2: [TABLE OF CONTENTS AND SELECTED ABSTRACT IN THE FIELD OF PETROLEUM LITERATURE]. [1962] [1]p.
Order from OTS or SLA $1.10 62-10766

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1944, v. 44, no. 2, p. 67-69.

DESCRIPTORS: *Reports, *Index, *Abstracts, *Petroleum, Chlorine compounds, Bromine compounds, Sea water.

Contents:
Chlorine-bromine coefficient of underground waters, by A. P. Vinogradov.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1944, VOL. 44, NO. 7: [TABLE OF CONTENTS AND SELECTED ABSTRACT IN THE FIELD OF PETROLEUM LITERATURE]. [1962] [1]p. 1 ref.
Order from OTS or SLA $1.10 62-10770

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1944, v. 44, no. 7, p. 285-288.

DESCRIPTORS: *Reports, *Indexes, *Abstracts, *Petroleum, Rubidium, Plants (Botany).

Contents:
Concentration of rubidium in plants, II, by T. Borovik-Romanova.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1944 VOL. 44, NO. 8: [TABLE OF CONTENTS AND SELECTED ABSTRACT IN THE FIELD OF PETROLEUM LITERATURE]. [1962] [1]p. 2 refs.
Order from OTS or SLA $1.10 62-10771

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1944, v. 44, no. 8, p. 328-330.

DESCRIPTORS: *Reports, *Indexes, *Abstracts, *Petroleum, Ignition, Fulminates, Hydrogen, Oxygen.

Contents:
Ignition limits of a fulminating mixture of hydrogen and oxygen in an iron vessel, by A. B. Nalbandzhan.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1944 VOL. 44, NO. 9: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 2p. 2 refs.
Order from OTS or SLA $1.10 62-10772

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1944, v. 44, no. 9, p. 392-395.

DESCRIPTORS: *Reports, *Indexes, *Abstracts, *Petroleum, Rubber, Gases, Exchange reactions, Plants (Botany).

Contents:
Rubber formation in roots of Kok-Sagyz under conditions of impeded gas exchange, by O. Ya. Sobolevskaya.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1944, VOL. 45, NO. 5: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 2p.
Order from OTS or SLA $1.10 62-10774

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1944, v. 45, no. 5, p. 184-187 and 209-212.

DESCRIPTORS: *Reports, *Indexes, *Abstracts, *Petroleum, Seismic waves, Rubber, Plants (Botany).

Contents:
Seismic logging, by A. E. Ostrovskii
Contribution to the problem of rubber formation in the roots of Kok-Sagyz, by P. S. Belikov.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1944, VOL. 45, NO. 6: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 3p. 1 ref.
Order from OTS or SLA $1.10 62-10775

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1944, v. 45, no. 6, p. 241-243 and 248-254.

DESCRIPTORS: *Reports, *Indexes, *Abstracts, *Petroleum, Adsorption, Charcoal, Minerals, Water, Sedimentary rock.

Contents:
Adsorption from solutions and microporosity of activated charcoals, by A. V. Kiselev and K. D. Shcherbakova
Origin of the principal types of mineralized waters in sedimentary rocks, by A. N. Buneev.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL MACHINE BUILDING NO. 18. 22 Mar 63 [69]p. 10 refs. JPRS: 18289.
Order from OTS $1.75 63-21387

Trans. of Khimicheskoe Mashinostroenie (USSR) 1963 [v. 5] no. 1, p. 1-5, 28-31, 38, 41, 43-45; Standartizatsiya (USSR) 1963 [v. 27] no. 1, p. 59; Mashinostroitel' (USSR) 1963, no. 1, p. 39.

DESCRIPTORS: *Industrial production, Chemical engineering, Machines, Construction, Design, *Steel, *Condensers (Liquifiers), *Rubber, Processing, *Flotation, *Driers (Apparatus), *Heat exchangers, *Valves, Steam valves.

Contents:
Improving the application of scientific-research and design resources in chemical machine-building (excerpt)
Modernization of equipment as a means for raising the output of chemicals, by M. D. Mazo
Prospects for developing new steels for use in the chemical industry, by M. B. Shapiro and others
Replacing a lens-type condenser with a cylindrical type, by P. A. Kozodaev
The worm devulcanizer 320, by Yu. P. Vertebnyi
Various new chemical machines, apparatus and equipment
Substandard steam and gas valves being supplied to the chemical industry, by M. I. Dan'shin and M. S. Brin
A new rubber-processing machine.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 59. 3 Apr 63 [46]p. JPRS: 18522.
Order from OTS $1.25 63-21489

Trans. of Agitator (USSR) 1962, 24 Dec, p. 46; and 11 selected articles from Dec 62-Jan 63 issues of 7 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Melamine, Production, Industrial plants, *Plastics, *Synthetic rubber, *Fertilizers, *Machines, *Tires.

Contents:
Melamine production is started at the Kirovakan combine, by I. Tomchin
Expanding the Novo-Kemerovo chemical combine, by Yu. Kotlyarov
Plan the introduction of plastics into industry, by V. Braginskii
Expedite the expansion of the Omsk synthetic rubber plant, by N. Chernov
Utilize local fertilizers in Krasnodarskii Krai, by E. Blazhnii and others
Expanding the utilization of local fertilizers
New production at the Moscow synthetics products and materials combine, by G. Zokhin
Produce more machines for polymer processing, by V. Tikhomirov
The expansion of chemical industry in 63
New Soviet synthetic rubbers, by B. Dolgoplosk
A visit to the Karbolit plastics plant, by I. Sergeeva and N. Kramchanin
Public participation in improving production at the Kirov tire plant, by P. Loginov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 60. 4 Apr 63 [42]p. JPRS: 18540.
Order from OTS $1.25 63-21500

Trans. from Leninskoe Znamya (USSR) 1962, 17 Nov; Pravda, Leningrad (USSR) 1962, 17 Nov; Zarya Vostoka (USSR) 1962, 17 Nov; Stroitel'naya Gazeta (USSR) 1962, 28 Nov, 2 Dec.

DESCRIPTORS: *Industrial production, *Chemical industry, *Fertilizers, *Industrial plants, Construction, *Shale, Processing, *Pigments, Zinc compounds, Sulfides, Sulfates, Barium compounds, *Synthetic rubber, *Elastomers, *Plastics, *Polyethylene plastics, *Pipes

Contents:
Research at the Voskresensk chemical combine, by N. Doktorov
Lag between the development and production at the shale processing combine in Kokhtla-Yarva, by M. Barshchevskii
Progress at the Kutaisi Lithopone plant, by G. Dzimistraishvili
The urgent need for planning synthetic rubber plants, by A. Zinov'ev
Lagging construction of the Volgograd chemical combine, by V. Sergeev and I. Andreev
Progress in synthetic rubber production
Construction of the Strelitamak synthetic rubber plant is on schedule, by M. Bukhanov
High-strength elastomers
Lagging construction of the Simferopol' plastics plant, by E. Krylov
Lagging construction at the Karaganda synthetic rubber plant, by P. Ermakov
Lagging construction of the Brovary polyethylene plant, by K. Myshlyaev
Progress in production of polyethylene pipes at the Tambov mechanical-boiler plant, by V. Avtonomov

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 61. 5 Apr 63 [44]p. JPRS: 18581.
Order from OTS $1.25 63-21524

Trans. of Nauchno-Tekhnicheskie Obshchestva SSSR, 1962 [v. 4] no. 12, p. 40-42; and 9 selected articles from Dec 62-Jan 63 issues of 7 Russian newspapers.

DESCRIPTORS: Chemical engineering, *Chemical industry, *Plastics industry, Industries, Laboratory equipment, Electrochemistry, Synthetic rubber, Plastics, Industrial production, Management engineering

Contents:
Modernize laboratory equipment at the research institute of synthetic rubber, by A. Zernov
Criticism of construction of the Chirchik electrochemical combine, by K. Vysokov and K. Mirkhatov
Building the Sumgait chemical combine, by B. Mishne
Start the industrial production of Eskapon the Soviet synthetic resin, by P. Kazakov
Chemical industry in 1963
New production at the Moscow Galalit plant, by N. Petrov
The development of chemical industry by 63
Improve planning in the chemical enterprises of Bashkiriya, by A. Laletin
Growth of chemical industry in the Moscow oblast sovnarkhoz, by I. Karataev
Progress at the Zhilevo plastics plant, by F. Aboimov and B. Yatsenko

Benzler, H. and Koch, A. V.
DIAGRAM OF STATE FOR ETHYLENE UP TO 10,000 (METRIC) ATMOSPHERES PRESSURE. [1962] 14p.
Order from K-H $17.50 K-H 3485 a

Trans. of Chemie-Ing[enieur]-Techn[ik] (West Germany) 1955, v. 27, no. 2, p. 71-75.

DESCRIPTORS: *Ethylenes, *Barometric pressure.

Bergh, Sven V.
RATIONAL EXPLOITATION OF BITUMINOUS SHALE. [1962] 9p. (figs. omitted) 1 ref.
Order from SLA $1.10 63-10687

Trans. of Industritidningen Norden [Jämte Svensk Tidskrift for Industriellt Rättsskydd] (Sweden) n.d. no. 16/17, p. 159ff.

DESCRIPTORS: *Bitumens, *Shale, *Refineries, Economics, *Fuels.

Bokszczanin, Stanislas.
RELATIONSHIP BETWEEN THE ACETYLENE YIELD OF CALCIUM CARBIDE AND THE POWER CONSUMPTION, AND SOME DATA ON THE EFFECT OF THE QUALITY OF THE RAW MATERIALS USED. [1962] [15]p.
Order from SLA $1.60 62-20216

Trans. of Journal du Four Electriques et [des Industries Electrochimiques] (France) 1957, v. 62, no. 4, p. 123-128.

DESCRIPTORS: *Acetylenes, *Calcium compounds, *Carbides, Coke, Fuel consumption, Furnaces, Synthetic rubber, Industrial production.

Gelperin, N. I. and Krokhin, N. G.
DETERMINATION OF THE RESISTANT COEFFICIENTS IN THE MOVEMENT OF VISCOSE AND ACETYL CELLULOSE SOLUTIONS. May 62 [10]p. 5 refs.
Order from OTS or SLA $1.10 62-20027

Trans. of Khim[icheskie] Volokna (USSR) 1961, no. 4, p. 37-41.

DESCRIPTORS: *Fibers (Synthetic), Solutions, *Cellulose, *Acetyl radicals, *Viscose, Motion, Resistance, Numerical analysis.

Gewiss, L. V.
FILTERING CARTRIDGE FOR LIQUIDS OR GASES AND PROCEDURE FOR ITS PREPARATION. [1962] 13p. (figs. omitted).
Order from OTS or SLA $1.60 62-16395

Trans. of French patent 1,094,978, gr. 14, cl. 6, appl. 28 Nov 53, issued 15 Dec 54, pub. 25 May 55.

DESCRIPTORS: *Liquid filters, *Gas filters, Preparation, Materials.

Herrmann, O.
RELATIONS BETWEEN APPLICATION-TECHNOLOGICAL CHARACTERISTICS, CHEMICAL CONSTITUTION AND DEGREE OF STRETCHING OF PLASTIC FILMS. [1962] 18p.
Order from K-H $22.50 K-H 12346 b

Trans. of Angew[andte] Chem[ie] (West Germany) 1962, v. 74, p. 633-637.

DESCRIPTORS: Chemical analysis, *Elasticity, *Stresses, *Plastic films.

Ibragimov, K. Sh.
THE MAXIMUM OIL PRODUCTION UNDER INJECTION FROM TWO SIDES. [1963] 5p.
Order from ATS $8.00 ATS-59P66R

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. Neft' i Gaz (USSR) 1962, v. 5, no. 7, p. 37-41.

DESCRIPTORS: *Petroleum, *Oils, Production, Injection.

Kakovskii, I. A. and Revnivtsev, V. I.
THE USE OF ELECTRICAL SEPARATION FOR ZIRCON-PYROCHLORE CONCENTRATES. [1961] [13]p. 3 refs. [DSIR NLL] M. 2831; Warren Spring Lab. Trans. NT 734.
Order from OTS or SLA $1.60 62-19123

Trans. of [Vsesoyuznoe Obshchestvo po Rasprostraneniyu Politicheskikh i Nauchnykh Znanii. Seriya 4] (USSR) 1958, no. 13, p. 16-24.

DESCRIPTORS: *Zirconium compounds, *Silicates, *Niobium compounds, Minerals, Separation, Electrostatics.

Oshima, M.
DEVELOPMENT OF NEW WOOD-CHEMICAL INDUSTRY. [1962] 14p.
Order from SLA $1.60 62-18691

Trans. of Hakko Kyokaishi (Japan) 1959, v. 17, no. 5, p. 201-206.

DESCRIPTORS: *Chemical industry, *Wood, Glucose, Xylose, Fermentation, Lignin, Wastes (Industrial), Economics.

Polgar, Miklos.
OUTSTANDING CHEMICAL ENGINEERING ACHIEVEMENTS OF BUDAPEST TECHNICAL UNIVERSITY OVER THE PAST 15 YEARS. 28 Mar 63 [15]p. 1 ref. JPRS: 18403.
Order from OTS $0.50 63-21440

Trans. of Magyar Kemikusok Lapja (Hungary) 1962, v. 17, no. 11, p. 488-493.

DESCRIPTORS: *Chemical engineering, Universities, *Hungary.

Reshetnikova, A. D.
DETERMINATION OF THE AMOUNT OF OXYGEN CONTAINED IN A LIQUID AT ATMOSPHERIC PRESSURE. 21 Jan 63 [13]p. 2 refs. FTD-TT-62-1653.
Order from OTS or SLA $1.60 63-15514

Unedited rough draft trans. of mono. Issledovanie Nekotorykh Elementov Gidropneumoticheskogo Oborudovaniya Samoletov [Moscow] 1961.

DESCRIPTORS: *Hydraulic fluids, *Oils, *Oxygen, Determination, Vacuum systems, Manometers.

An investigation was made of the air content of three oils, AMG-10F, A, and B at atmospheric pressure and at room temperature. The experimental dependence of the coefficient of liberation on the degree of evacuation was determined. This dependence bears a very specific character for all test liquids and is described by the theoretical formula. As a result of the experiment the maximal coefficients of air liberation (at maximal evacuation), which enables one to judge the capacity of the liquid for gas saturation at atmospheric pressure was determined. (Author)

Rösner, Oskar.
THE EXTRACTION AND PURIFICATION OF GERMANIUM. [1962] 9p. (figs. omitted).
Order from SLA $1.10 62-18601

Trans. of Zeitschrift für Erzbergbau und Metallhüttenwesen (West Germany) 1955 [v. 8, no. 1] p. 1-7.

DESCRIPTORS: *Germanium, Purification, Solvent extraction.

Seliger, H.
COMMERCIAL PRODUCTION OF CALCIUM METAL. II. DISTILLATION PROCESSES. [1962] [14]p. 1 ref.
Order from SLA $1.60 62-20078

Trans. of Freiberger Forschungshefte. [Reihe] B Hüttenwesen[metallurgie] (West Germany) 1956, v. 17, p. 34-49.

DESCRIPTORS: *Calcium, Metals, Purification, Distilling plants, Production, Reduction.

Sennewald, K. and Steil, K.
ACETALDEHYDE AS A RAW MATERIAL FOR ACRYLONITRILE: THE KNAPSACK PROCESS FOR THE MANUFACTURE OF ACRYLONITRILE FROM ACETALDEHYDE AND HYDROGEN CYANIDE BY WAY OF LACTONITRILE. [1962] [18]p. 8 refs.
Order from SLA $1.60 62-20084

Trans. of Chem[ie]-Ing[enieur]-Techn[ik] (West Germany) 1958, v. 30, no. 7, p. 440-446.
Another trans. is available from SLA mi$2.70, ph$4.80 as 59-15309 [1959] 29p.

DESCRIPTORS: *Acrylonitriles, Production, *Acetaldehydes, *Cyano acids, Lactic acid, Nitriles.

For abstract see Technical Translations 2: p. 258, 1959

Tesner, P. A.
RATE OF INTERACTION OF GASES WITH SOLID CARBON. [1962] 12p.
Order from ATS $15.50 ATS-07P66R

Trans. of Gaz[ovaya] Prom[yshlenost'] (USSR) 1960, v. 5, no. 2, p. 45-52.

DESCRIPTORS: *Carbon, Solids, *Gases, Chemical reactions.

Thomann, H. J. and Auerbach, H.
A NEW APPARATUS FOR THE DETERMINATION OF SULPHUR BY THE COMBUSTION METHOD BASED ON SURFACE ABSORPTION. Mar 63.
Order from BISI £2 15s BISI-3136

Trans. of Giessereitechnik (Germany) 1961, v. 7, Nov, p. 337-342.

DESCRIPTORS: Laboratory equipment, *Sulphur, Combustion, Absorption.

Ufford, J. J. Quarles van and Vlugter, J. C.
SULFUR AND ASPHALT, I. [1962] 9p. 10 refs.
Order from SLA $1.10 63-10131

Trans. of Brennstoff-Chemie (West Germany) 1962, v. 43, no. 6, p. 173-176.

DESCRIPTORS: *Sulfur, *Sulfur compounds, *Asphalt, Mixtures, Chemical reactions, Mechanical properties.

In a mixture with asphalt, sulfur behaves primarily as a plasticizer. The mixture has a higher penetration index and a lower Fraass breaking point than the original asphalt. The plastic properties of sulfur are quickly lost because a change from plastic to crystalline sulfur takes place. If polymethylene tetrasulfide is used instead of elemental sulfur, it appears that the effect of this polymer on asphalt is very similar to that of sulfur. This mixture also has a higher penetration index and a lower Fraass point. However, the plastic nature of the polymer in the mixture is not so easily lost. A disadvantage of the simple organic polysulfides is that they are not very stable at high temperatures such as, for example, those that are stipulated in the normal applications for bituminous products. (Author)

Vakhrushev, I. A., Botnikov, Ya. A., and Zenchenkov, N. G.
HEAT TRANSFER FROM A FLUIDIZED BED OF HOT COKE TO THE SURFACE OF HORIZONTAL TUBES. [1963] 6p.
Order from ATS $8.00 ATS-92Q66R

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1961, no. 11, p. 787-789.

DESCRIPTORS: *Pipes, Surfaces, *Coke, Fluidized solids, *Heat transfer.

Civil Engineering

Brendel, G.
T-BEAMS. Rep. of Committee no. 9 (meeting no. 5) Vienna, Apr 59. [1962] [37]p. 5 refs.
Order from SLA $3.60 62-20456

Trans. of Comité Européen du Beton, Paris. Bulletin d'Information (France) 1959, no. 18.

DESCRIPTORS: *Beams (Structural), *Flanges, Structural parts, Reinforced concrete, Design, Tests, Mechanical properties.

Contents:
Results of studies made in 1958
Notations
Computation of the effective flange width b_m by disregarding the flexural stiffness of the slab
Influence of the flexural stiffness of the slab
Tests
Additional problems
Summary
Appendix A: Introduction of the flexural stiffness of slab
Appendix B: T-beam models of reinforced gypsum.

Dischinger, F.
CRITICAL OBSERVATIONS ON THE GERMAN SPECIFICATIONS FOR THE CALCULATION OF THE SUPPORTING BEAMS OF TWO-WAY SLABS AND PROPOSALS FOR A NEW METHOD OF CALCULATION (Kritische Betrachtungen zu den Deutschen Bestimmungen für die Berechnung der Trägerroste Kreuzweis Gespannter Platten und Vorschläge für eine Neue Berechnungsweise) tr. by E. M. Rensaa, 1962, 40p. NRCC Technical Trans. 1048.

Order from NRCC $2.00 NRCC C-4204

Trans. of [Beton und Stahlbetonbau] (Germany) 1942, v. 41, p. 86-91, 103-108, 127-130.

DESCRIPTORS: *Specifications, Germany, Concrete, *Reinforced concrete, Structural parts, Supports, *Beams (Structural), Deflection, Elasticity, Load distribution, Numerical methods and procedures.

Fastenko, V.
MECHANIZATION OF KERBSTONE LAYING (Mekhanizatsiya Ustanovki Bordyura) tr. by G. T. Cranford. July 61, [4]p. (foreign text included). DSIR Library Communication no. 988; NLL M. 3616.
Order from OTS or SLA $1.10 62-25281

Trans. of Avtom[obil'nye] Dorogi (USSR) 1960, v. 23, no. 11, p. 27.

DESCRIPTORS: *Road-building equipment, Automation, Excavators.

Frenz, Reinhold.
A PLASTIC HOUSE IN THE BUNGALOW STYLE. [1962] 19p.
Order from K-H $23.75 K-H 11959

Trans. of Kunststoffe (West Germany) 1960 [v. 50] no. 6, p. 360-365.

DESCRIPTORS: *Plastics, *Housing, Construction, Design.

Grassegger, Fritz and Otter, Oskar.
JOIST SUPPORT, tr. by J. R-P. 24 Aug 62, 9p. (figs. omitted).
Order from OTS or SLA $1.10 62-32928

Trans. of French patent 1,095,251, gr. 7, cl. 1, appl. filed 12 Mar 54, granted 15 Dec 54, pub. 31 May 55 (pat. appl. filed in Switzerland 4 July 53 in the names of applicants).

DESCRIPTORS: *Supports, Beams, Mounting brackets, Design.

Kozmin, Yu. G. and Nevzorov, I. N.
IMPACT EFFECT OF TRAINS ON METALLIC BRIDGES. [1962] 7p.
Order from OTS or SLA $1.10 63-10643

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 6] p. 80-83.

DESCRIPTORS: *Impact shock, *Locomotives, *Bridges, Structures, Dynamics, Tensiometers, Deformation, Load distribution, Beams (Structural), Railroad tracks.

Vyalov, S. S.
CREEP AND LONG RESISTANCE OF FROZEN SOILS. [1962] 5p. 8 refs.
Order from OTS or SLA $1.10 62-20391

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1955, v. 104, no. 6, p. 850-853.
Other translations are available from OTS or SLA $1.10 as 62-25919, TRC Trans-1064 [1962] [10]p. and from NRCC as NRCC C-2365.

DESCRIPTORS: *Soils, Minerals, Particles, Ice, Water, Freezing, Density, Rock, Geology, Melting, *Creep, *Fatigue (Mechanics), Mechanical properties, Stresses, Deformation.

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 48 (ELECTRICAL AND POWER ENGINEERING SERIES). 22 Mar 63 [9]p. JPRS: 18296.
Order from OTS $0.50 63-21391

Trans. of selected abstracts from Referativnyi Zhurnal. Elektrotekhnika i Energetika (USSR) 1962, nos. 17, 20-22.

DESCRIPTORS: *Abstracts *Electrical engineering, Electric motors, Electrical equipment, Irrigation systems, Economics, *China, Power supplies, Thermal radiation.

DEVICE FOR THE EVACUATION OF ELECTRICAL BULBS OR OTHER VACUUM VESSELS. 3 Dec 47, 5p. (figs. omitted).
Order from OTS or SLA $1.10 62-18465

Trans. of German patent 492,768, 1 Mar 30, granted 13 Feb 30, pat. from 10 July 26.

DESCRIPTORS: Lighting equipment, *Electron tubes, *Light globes, Degasification.

ELECTRIC COOKING RANGE COMBINED WITH HOT WATER HEATER. [1962] 4p.
Order from K-H $5.00 K-H 11530

Trans. of Swedish patent 93,501, n.d.

DESCRIPTORS: *Heaters, *Cooking devices, Kitchen equipment and supplies, Electrical equipment.

NEWS OF SCHOOLS OF HIGHER EDUCATION, ELECTROMECHANICS, 1962, [VOL. 5] NO. 2: SELECTED ARTICLES. 31 Jan 63 [81]p. 25 refs. FTD-TT-62-1556.
Order from OTS or SLA $8.10 63-15538

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Elektromekhanika (USSR) 1962 [v. 5] no. 2, p. 140-167 and 177-195.

DESCRIPTORS: *Electric machinery, Machines, Pulse generators, Power equipment, Transients, Analog systems, Coils, Subminiature electrical equipment, Armatures, Frequency converters, Magnetic amplifiers.

Contents:
Calculation of the characteristics of symmetrical-pulse induction generators, by A. N. Tkachenko
A mathematical analog of transients of a synchronous machine using experimental dynamic characteristics, by Yu. A. Bakhvalov
Calculating "sine" windings of single-phase asynchronous micromachines, by K. V. Pavlov and G. S. Somikhina
A single-armature converter with superimposed magnetization, by I. S. Kopylov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 38. 20 Mar 63 [14]p. JPRS: 18253.
Order from OTS $0.50 63-21375

Trans. from Kommunist, Erevan (USSR) 1962, no. 229(8619) 29 Sep, p. 2; and Zarya Vostoka (USSR) 1962, no. 228(11548) 28 Sep, p. 2.

DESCRIPTORS: *Industrial production, *Electrical equipment, Electric cables, Recording systems, Precision equipment, Vibrators (Electrical), Kitchen equipment and supplies, Washing machines.

Contents:
Utilizing intra-production reserves in the electrical equipment industry of Armenia, by G. Khachatryan
New products organized by Georgian electrical equipment and instrument building industries
Complaints concerning washing and drying machines produced by Batumi electrical equipment plant, by S. Bel'skii.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 39. 21 Mar 63 [40]p. 4 refs. JPRS: 18268.
Order from OTS $1.00 63-21381

Trans. of Promyshlennost' Armenii (USSR) 1962 [v. 5] no. 11, p. 58-60; Vestnik Elektropromyshlennosti (USSR) 1962 [v. 33] no. 12, p. 1-9, 40-42; Shakhtnoe Stroitel'stvo (USSR) 1962 [v. 6] no. 11-12, back covers; Avtomatika, Telemekhanika i Svyaz (USSR) 1962 [v. 6] no. 10, p. 46; Svetotekhnika (USSR) 1962 [v. 8] no. 12, p. 31; Radio Programmy (USSR) 1962, 9 Dec, p. 1.

DESCRIPTORS: *Industrial production, *Electrical equipment, *Electric cables, *Power transformers, *Electric motors, Fans, Electric connectors, Electromagnets, Electric relays, Design, *Searchlights, Shipborne, Lighting equipment, Mining engineering, Economics, Pumps.

Contents:
Permissible loads for service conductors and cables, by G. Arzumanyan and others
Production of large-unit electrical equipment must be expanded, by L. B. Slavnyi
Two-speed vertical squirrel-cage motors for pumps, by Z. B. Naiman
New equipment from the Minsk electrochemical plant, by P. P. Goidenko
Mine electrical devices and fittings
Industry responds to criticisms of electrical equipment
Shipboard searchlight for fishing
Mine electrical devices and fittings
Large quantities of scarce raw materials go into waste in cable production.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 40. 25 Mar 63 [10]p. JPRS: 18325.
Order from OTS $0.50 63-21407

Trans. from Pravda, Leningrad (USSR) 1962, 12 Oct, p. 4; Pravda, Moscow (USSR) 1962, 3 Oct, p. 1; Vechernyaya Moskva (USSR) 1962, 2 Oct, p. 1; Bakinskii Rabochii (USSR) 1962, 14 Oct, p. 2.

DESCRIPTORS: *Industrial production, *Electrical equipment, *Welding, Machines, Industrial plants, Training, Automation, Steel, Copper, Plastics.

Contents:
Elektrik plant enlarges assortment, by V. Kuz'min
Dinamo collective presses ahead with complete mechanization, by I. Bordybakhin
Moscow welders experimenting with new materials and techniques
New industrial district arises near Stepanakert, by E. Sarkisyan.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 41. 1 Apr 63 [18]p. 2 refs. JPRS: 18469.
Order from OTS $0.50 63-21467

Trans. of Elektricheskie Stantsii (USSR) 1962 [v. 33, no. 12] p. 85; Narodnoe Khozyaistvo Kazakhstana (USSR) 1962 [v. 20, no. 10] p. 30-32; and from Sovetskaya Litva (USSR) 1962, 26 Sep, p. 1; Zarya Vostoka (USSR) 1962, 26 Sep, p. 2; Rabochaya Gazeta (USSR) 1962, 21 Dec, p. 2.

DESCRIPTORS: *Industrial production, *Electrical equipment, Design, *Electric switches, *Economics, Costs, *Blast furnaces, Construction, Voltage.

Contents:
Development of new high voltage equipment
Production of internal disconnecting switch systems, L. M. Lopshits
An economic analysis of production costs, by I. Mikeladze
Remodeling of the Chirchik elektromash plant, by Khoze Aryas and B. Skorodumov
Difficulties in blast furnace construction, by V. Stikharnyi and A. Kozlovskii.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 42. 4 Apr 63 [23]p. JPRS: 18559.
Order from OTS $0.75 63-21508

Trans. from Ekonomicheskaya Gazeta (USSR) 1962, no. 40[61] p. 43; no. 43(64) p. 5; no. 44[65] p. 22 and 26

DESCRIPTORS: *Industrial production, *Electrical equipment, *Electric insulation, Economics, *Engine starters, Milling machines, *Furnaces, *Management engineering. Quality control, *Electric furnaces, Magnetic properties.

Contents:
Specialized shops to produce Escapone, a highly efficient electrical insulation
Advertisement: sale of magnetic starters
Advertisement: sale of duplicate-milling machine
Lag in production of electric furnaces due to failure of supply of material and equipment, by V. Timofeev
Cooperation of manufactures with designers and researchers vital in production of quality products
Durability of insulating materials contributes to savings of metals, by P. Kazakov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 60. 26 Mar 63 [27]p. JPRS: 18375.
Order from OTS $0.75 63-21428

Trans. of Tekhnika Kino i Televideniya (USSR) 1963 [v. 7] no. 1, p. 66-68, 92-94, and back cover.

DESCRIPTORS: *Industrial production, *Precision equipment, *Photographic equipment, *Motion picture photography, *Television receivers, *Sound motion picture projectors, *Cameras, *Motion picture cameras, Television.

Contents:
Demands of amateur motion picture organizations upon industry, by A. S. Tikhomirov
Improving the quality of cameras and equipment for the moving picture network, by E. A.
Brief news items on television
Transcription apparatus set KPZ-15.

Bierl, Richard.
ABOUT THE TRUE FREQUENCY-RESPONSE IN RECORDING AND REPRODUCTION OF SOUND IN MAGNETIC TAPE RECORDING. [1962] 16p. 6 refs.
Order from SLA $1.60 62-18694

Trans. of Zeitschrift fllr Angewandte Physik (West Germany) 1951, v. 3, no. 5, p. 161-165.

DESCRIPTORS: Frequency, Sound, *Magnetic recording systems, Integrators, Measurement, Integral equations, *Magnetic tape, *Sound reproduction systems.

From the consideration of the distribution of magnetic reluctances in record and reproduce heads follow an inverse logarithmic, hyperbolic respectively, flux-distributions. The -drop of the record head gap function is compensated by a -proportional frequency of the reproduce head flux, which in the latter stems from the local differential quotient of magnetization. The true gap function alone gives a well founded explanation for the strong drop at higher frequencies, whereas previously a demagnitization effect was necessary (classical gap function), as well as for the rise and sequential drop at lower frequencies. The equivalent EMF is not a sufficient comparative measure for the reproduce EMF, since the counter MMF as well as stray inductance (reproduce head coil/core) do not include them; load and counter-MMF may falsify the EMF frequency curves. (Author)

Brinkmann, C.
A VACUUM IMPREGNATION FOR BITUMEN IN ELECTRICAL INSULATION. 27 Feb 63.
Order from TTIS $18.00 TTIS-2442

Trans. of [ETZ] Elektrotechnische Z[eitschrift. Ausgabe B. der Elektrotechniker] (Germany) 1962, v. 14, 24 Dec, p. 700-704.

DESCRIPTORS: Vacuum apparatus, Impregnation, *Bitumens, *Electric insulation.

Dolotov, V. G.
A MULTICHANNEL PHASE SYSTEM. 24 Jan 63 [5]p. FTD-TT-62-1636.
Order from OTS or SLA $1.10 63-15779

Unedited rough draft trans. of Soviet patent 145919 (722250/26) 18 Mar 61.

DESCRIPTORS: *Telemeter systems, Telemetering transmitters, Telemetering receivers.

A multichannel phase telemetry system with frequency separation of the measurement channels with static frequency multipliers on the transmitter and pulse-type phase meters on the receiving set, with a common a-c supply for the transmitter and receiver is described. For the purpose of simplifying the system and increasing its reliability, the receiving set of the system uses a single-frequency master source (generator) of reference voltage, the output of which is connected to the pulse-type phase meters, the number of which is equal to the number of measurement frequency channels. (Author)

Fähnrich, H. and Schaaf, W.
APPARATUS AND CIRCUIT REQUIREMENTS IN AUTOMATIC TELEGRAPH SYSTEMS. [1962] 15p. (figs. tables refs. omitted).
Order from SLA $1.60 62-18159

Trans. of [NTZ; Nachrichtentechnische Zeitschrift] (West Germany) 1952, v. 5, no. 6, p. 387-396.

DESCRIPTORS: *Circuits, Automatic, *Telegraph systems, *Communication equipment, *Networks, Traffic, Volume.

Fateev, N. P.
A PULSED ULTRASONIC THERMOANEMOMETER. 15 Jan 63 [4]p. FTD-TT-62-118.
Order from OTS or SLA $1.10 63-15329

Unedited rough draft trans. of Russian Patent 134920 (645314/26) 21 Nov 59.

DESCRIPTORS: *Temperature sensitive elements, *Anemometers, *Ultrasonics, Measuring devices (Electrical and Electronic).

A pulsed ultrasonic thermoanemometer is described in which the velocity of a stream is measured from the difference between the frequencies of pulse-modulated ultrasonic oscillations propagating in two opposed directions in a closed dynamic system, differing in that in order to exclude the effect of the stream on the temperature measurement a device is used for summing the above mentioned frequencies of pulse repetition in the channels. (Author)

Fetisov, T.
DEVELOPMENT AND APPLICATION OF COLD CATHODE TUBE. 18 Mar 63 [8]p. (photo. omitted).
JPRS: 18179.
Order from OTS $0.50 63-21342

Trans. of Nedelya (USSR) 1963, no. 7, 10-16 Feb, p. 11.

DESCRIPTORS: *Cold cathode tubes, Design, Electronic equipment, Miniature electron tubes, Reliability (Electronics)

Hoffmann, F.
CARBON-PRESSURE RESISTANCES. 20 Nov 47, 14p. (figs. refs. omitted).
Order from SLA $1.60 62-18366

Trans. of ETZ [Elektrotechnische Zeitschrift. Ausgabe A. Zentralblatt fUr Elektrotechnik] (Germany) 1937, v. 58 [no. 41/42] p. 1111-1115 and 1138-1142.

DESCRIPTORS: *Carbon resistors, Pressure, *Resistors, Carbon, Materials, Electrical properties, *Mechanical properties.

Ivanov, V. I.
CYCLIC RELAY CIRCUITS AND ANALYTIC RELATIONS THEREIN. [1961] 5p. 5 refs. MDF I-110.
Order from OTS or SLA $1.10 62-19908

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 104, no. 2, p. 239-241.

DESCRIPTORS: Electrical networks, *Electric relays, Relays, *Circuits, Switching circuits, Sequences, Synthesis.

A class of multi-contact relay circuits, which will be called cyclic, is described in this paper. The system of this class of circuits is investigated and analytic relations are given which simplify the analysis and design of a specific group of these circuits. The analysis is made on the basis of the theory of relay circuits. (Author)

Lindae, G.
LIGHTING EQUIPMENT ON VEHICLES - A CONTRIBUTION TO TRAFFIC SAFETY (Licht am Fahrzeug - Ein Beitrag zur Verkehrssicherheit). [1962] [33]p. (foreign text included) 6 refs.
Order from SLA $3.60 62-18674

Trans. of ATZ Automobiltechnische Zeitschrift (Germany) 1962, v. 64, no. 5, p. 152-158.

DESCRIPTORS: *Lighting equipment, *Passenger vehicles, *Safety, *Traffic, Light, Incandescent lamps, *Signal lights, Ranges (Distance)

Lupanov, O. B.
ON RECTIFYING AND RECTIFYING-SWITCHING CIRCUITS. [1961] 6p. 6 refs. MDF L-111.
Order from OTS or SLA $1.10 62-23220

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1956, v. 111, no. 6, p. 1171-1174.

DESCRIPTORS: Electrical networks, *Switching circuits, *Rectifiers, Electric terminals, Synthesis, Matrix algebra, Algebras, Circuits.

Lutidze, Sh. I., and Maglaperidze, O. K.
STEADY-STATE REGIMES OF A SYNCHRONOUS GENERATOR WITH IONIC SELF-EXCITATION. 17 Oct 62 [16]p. 2 refs. FTD-TT-62-1043.
Order from OTS or SLA $1.60 63-15349

Trans. of Elektroenergetika (USSR) 1960, v. 2, p. 94-104.

DESCRIPTORS: *Generators, Operation, Ions, Excitation, Statics, Electrical impedance, Commutators, Control, Circuits.

In static regimes of operation of a synchronous generator with ionic self-excitation the value of the commutation angle (when the parameters of the self-excitation system are given) varies only as a function of the control angle. If we know the law of change in the generator voltage and have the generator characteristic, we can determine the law of change in the control angle as a function of the load in the static regime and plot the static characteristics of the generator. The automatic excitation regulator and the entire grid-control system must be designed so as to ensure the law and range of change in the angle. (Author)

Nazarov, V. G.
ELECTRETS AND THEIR APPLICATION IN ELECTRICAL ENGINEERING. [1962] 10p. 7 refs.
Order from OTS or SLA $1.10 63-10776

Trans. of Elektrichestvo (USSR) 1954, no. 7, p. 60-62.

DESCRIPTORS: *Electric insulation, Electrical engineering, Magnetic properties, *Electrets.

The electrical insulation material - electrets, which have a constant electrification and properties analogous to the ones of permanent magnets are investigated. The application of electrets in the various fields of electrical engineering is discussed and data of the processing technology are given. (Author)

Pelle, Pierre.
DEVICE FOR THE CORRECTION OF TELEGRAPHIC SIGNALS TRANSMITTED IN AN ARYTHMIC CODE. [1962] 10p. (figs. formulae refs. omitted).
Order from SLA $1.10 62-18068

Trans. of Annales des Télécommunications (France) 1947, v. 2 [no. 4] p. 129-136.

DESCRIPTORS: Corrections, *Telegraph signals, Distortion, *Transmitter-receivers, Communication equipment, Networks, Design, Synchronization (Electronics), Telegraph equipment, Signals, *Coding.

Polonsky, Joseph.
A PORTABLE SELF-CONTAINED TELEVISION CAMERA. [1962] 12p. (figs. omitted).
Order from SLA $1.60 62-18819

Trans. of l'Onde Électrique (France) 1957, v. 37, no. 364, p. 650-657.

DESCRIPTORS: Portable, *Television camera, Design, *Television equipment.

Puhlmann, W.
ON THE MAGNETIC PROCESSES IN SOUND TAPES AND MAGNET HEADS IN MAGNETIC SOUND EQUIPMENT. [1962] 12p. (figs. formulae refs. omitted).
Order from SLA $1.60 62-18243

Trans. of [Elektronische Rundschau] (Germany) 1951, v. 5 [no. 2] p. 65-75.

DESCRIPTORS: *Magnetic tape, High frequency, Noise Magnetic materials, Static electricity, *Magnetic recording systems, *Sound reproduction systems.

The physical processes on the tape are represented with the aid of statically measured characteristic lines, the advantages of HF-premagnetization and of powdery sound carrier materials being given special consideration. A method is described for selecting suitable, magnetic starting materials for the sound carrier (tape). The unfavorable effect of external demagnetization on the frequency curve of the pickup-EMF can be controlled by internal demagnetization of the powdery tapes. The gap-losses are computed from the limiting cases of both the rectangular-and the exponential field-distribution curve. The tape noise is investigated with regard to the irregular distribution of magnetic particles. (Author)

Raikin, A. L.
A BIBLIOGRAPHY OF RELIABILITY LITERATURE. [1962] [10]p.
Order from OTS or SLA $1.10 63-10148

Trans. from #Avtomatika i Telemekhanika (USSR) 1962, v. 23, no. 9.

DESCRIPTORS: *Bibliography, Reliability, *Reliability (Electronics).

A reliability bibliography that is international in character is presented. American, Russian, British, Hungarian, Polish, Czech, and Japanese papers on reliability are listed and roughly classified. (Author)

Rakov, V. I.
CATHODE RAY TUBE SCREENS. 26 Mar 63 [8]p. JPRS: 18362.
Order from OTS $0.50 63-21424

Trans. of mono. Indikatornye Ustroistva Radiolokatsionnykh Stantsii (Radar Indicators) Leningrad, 1962, sect. 27, chap. 3, p. 205-208.

DESCRIPTORS: *Cathode ray tube screens, Fluorescent screens, Radar images, Plan position indicators, *Phosphors, Luminescence, Light transmission, Electron bombardment, Ion bombardment

Schmidbauer, O. and Altmann, K.
ON THE INFLUENCE OF THE MAGNETIC TAPE ON THE QUALITY OF TELEVISION TAPE RECORDING. [1962] 13p. 13 refs.
Order from SLA $1.60 62-20215

Trans. from Rundfunktechnische Mitteilungen (West Germany) 1962, v. 6, no. 1.

DESCRIPTORS: *Magnetic tape, *Television equipment, *Magnetic recording systems, Noise, Modulation, Circuits.

The quality of a television tape recording depends to a large extent on the electronics and on the mechanical construction of the tape recorder, including the heads. Nevertheless, it is the mechanical and magnetic properties of the tape that are decisive. The values for the magnetic flux and the signal-to-noise lies in the structure of the active layer. It is distinguished between two forms. For FM recording, however, the only one of importance is the modulation noise as a consequence of the external field for the orientated Weiss domains, and beyond this, the modulation defects due to inhomogenities of the layer. When these are of a larger size, they manifest themselves as "drop-outs". The authors illustrate the reasons for their existence and describe a device for indicating them. They go on to report on a number of investigations made with this device and speak of the development of a tape-testing installation using less costly single-head apparatus. In addition, the authors discuss the possibility of eliminating the drop-outs by an electronic process. (Author)

Shestakov, V. I.
ALGEBRAIC METHOD OF THE SYNTYESIS OF MULTICYCLE SYSTEMS OF r -POSITION RELAYS. [1961] 6p. 4 refs. MDF S-123.
Order from OTS or SLA $1.10 62-23207

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1957, v. 112, no. 1, p. 62-65.

DESCRIPTORS: *Electric relays, Relays, *Circuits, *Sequences, Sequence switches, Numbers, Vector analysis, *Algebras, Algorithms, Switching circuits.

Shizorin, V. P.
NEW TRANSITION GAUGES OF ELECTRICAL RESISTANCE (Novye Perekhodnye Mery Electricheskogo Suprotivleniya) tr. by A. Bursztyn. [1962] [26]p. (foreign text included). [CSIRO] Trans. no. 5651.
Order from OTS or SLA $2.60 62-33099

Trans. of Vses[oyuznyi] Na[uchno]-Iss[ledovatel'skii] Inst[itut] Met[rologii]. T[ru]d[y] (USSR) 1959, no. 40, [100]p. 5-15.

DESCRIPTORS: Electrical equipment, *Resistance (Electrical), Calibration, Electric potential, Coils, Circuits, Electric bridges, *Measuring devices (Electrical and Electronic).

The application of the new transfer electrical resistance gauges for the calibration of standard resistances permit a significant reduction in the number of measurements and therefore in the time required for their performance. The relative calibration error introduced by the transfer gauges do not exceed 1×10^{-7}. (Author)

Sobeshchanskii, L. F., Vlasov, M. V. and others.
A DIRECT CURRENT TRANSFORMER. 9 Jan 63 [5]p.
FTD-TT-62-117.
Order from OTS or SLA $1.10 63-15332

Unedited rough draft trans. of Soviet patent 129677 (640031/24) 30 Sep 59.

DESCRIPTORS: *Transformers, *Power transformers, Direct current, Semiconductor devices, Oscillators.

A direct current transformer is described with semiconductor components containing a master oscillator and power transformer, to the latter of which the load is applied, differing in this, that in order to simplify the transformer and increase its efficiency an auxiliary transformer with inductive feedback is used to excite the oscillator frequency; and the primary winding of this transformer is connected in parallel with the primary of the power transformer with two junction-type triodes mounted according to the schematic with a common control electrode, for example, the collector. (Author)

Syrbe, M.
TRANSISTORIZED TWO-STATE DEVICES IN CONTROL AND INFORMATION SYSTEMS, WITH SPECIAL REFERENCE TO THEIR USE IN STEEL PLANTS.
Dec 62, 3100 words.
Order from HB $8.80 HB-5647

Trans. of Stahl und Eisen (West Germany) 1962, v. 82, no. 11, p. 687-692.

DESCRIPTORS: *Steel industry, Automation, *Transistors, *Control systems, *Information retrieval.

Troitskii, V. S.
NULL METHOD OF MEASURING WEAK ELECTRICAL FLUCTUATIONS [Nulevoi Metod Izmereniya Slabykh Elektricheskikh Fluktuatsii]. [1961] 26p. 15 refs.
MDF T 120.
Order from OTS or SLA $2.60 62-23201

Trans. of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1955, v. 25, no. 3, p. 478-496.

DESCRIPTORS: Measuring devices (Electrical and electronic), *Null indicators, Circuits, *Noise (Radio), Electric currents, Oscillation, Test methods, Errors.

Balance conditions are found for the measurement of sinusoidal and noise voltages in the linear and square detector cases. Systematic and random errors are studied which are determined by the intrinsic noise of the apparatus. (Author)

Ulitin, V. G.
SPECIAL RECTIFIERS. 21 Jan 63, 4p.
FTD-TT-62-1646.
Order from OTS or SLA $1.10 63-15537

Unedited rough draft trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 3, p. 23-24.

DESCRIPTORS: *Welding, *Rectifiers, *Voltage, Regulators, Design.

Details are given of a welding rectifier designed for welding in a medium of protective gases and under flux, and a rectifier-regulator designed for the conversion of a-c current into d-c current regulated by a voltage of 80 to 27 volts.

Unger, Hans-Georg.
THE CALCULATION OF RIDGE WAVE GUIDES.
[1962] 12p. 4 refs.
Order from SLA $1.60 63-10248

Trans. of Archiv der Elektrischen Ubertragung (West Germany) 1955, v. 9, no. 4, p. 157-161.

DESCRIPTORS: *Waveguides, Electrical properties, Design.

This paper calculates the cutoff frequency and characteristic impedance of cross sections of ridge wave guides for which the known formulas are no longer applicable, and gives thus design data for ridge wave guides of any desired cross section. For completeness the known calculations are also shown in a co-ordinated form. Numerical evaluations show that by the use of suitable cross sections the cutoff frequency and characteristic impedance can be varied within wide limits.

Vul'fel'dt, I. K.
A METHOD FOR THE DIRECT TRANSFORMATION OF HEAT ENERGY INTO ELECTRICAL ENERGY. 9 Jan 63 [5]p. FTD-TT-62-759.
Order from OTS or SLA $1.10 63-15328

Unedited rough draft trans. of Soviet patent 140920 (689180/24) 16 Dec 60.

DESCRIPTORS: *Energy conversion, Heat, Electricity, *Thermoelectricity, Capacitors, Dielectrics.

A method is described of directly transforming heat energy into electrical energy by intermittently heating and cooling a non-linear electrical capacitor with a dielectric, the penetrability of which is a function of temperature, for the excitation of an alternating current as a result of the alternating change in the capacitance of the capacitor, differing in this, that in order to raise the efficiency and functional reliability of the energy converter, and also to decrease its weight, dimensions, and inertia, the indicated capacitor together with a linear inductance is included in a circuit functioning at parametric resonance at a frequency half that of the dielectric heating frequency. (Author)

Wist, Engelbert.
DEVICE FOR CARRYING OUT THE PROCESS FOR INCREASING THE ENERGY AND FOR POINTED FLAME FORMATION WITH AN ELECTRIC ARC, ACCORDING TO PATENT NO. 119,328. [1962] 3p.
Order from OTS or SLA $1.10 62-18293

Trans. of Austrian patent 129,236, cl. 49c, appl. 2 Dec 29, start of patent 15 Mar 32, issued 25 July 32 (addition to patent no. 119,328).

DESCRIPTORS: Energy, *Flames, *Electric arcs, Design, Gas flow, Electrodes, Alternating current, Direct current.

Zürcher, M.
TESTS ON ELECTRIC INSULATING MATERIALS FOR WIRE AND CABLE INSULATION. [1962] 5p. (figs. omitted).
Order from SLA $1.10 63-10052

Trans. of Ass[ociation] Suisse des Electriciens. Bulletin, 1947 [v. 38] 28 June, p. 374-377.

DESCRIPTORS: *Electric insulation, *Electric cables, *Electric wire, Insulating materials, Test methods.

Mechanical Engineering

EAST EUROPEAN MEASURING INSTRUMENTS AND CLAMPING DEVICES. 20 Mar 63 [8]p. (figs. omitted). JPRS: 18251.
Order from OTS $0.50 63-21374

Trans. of Mechanik (Poland) 1962, v. 35, no. 12, p. 670-672.

DESCRIPTORS: *Precision equipment, Measurement, *Jigs, *Poland, *East Germany, Clamps.

Contents:
New precision measuring instruments, by Z. Ozechowski
Universal clamping devices, by Wieslaw Miracki.

Prins, L.
HEAT AND MATERIAL TRANSFER IN A TRANSVERSELY-STREAMED RIMED AIR-COOLER. [1962] [14]p.
Order from SLA $1.60 62-20182

Trans. of Kältetechnik (West Germany) 1956, v. 8, no. 5, p. 160-164.

DESCRIPTORS: *Heat transfer, *Water vapor, Measurement, *Air conditioning equipment, Equations, Design, Ice.

Torre, C.
FORCE REQUIREMENT WITH TWIST DRILLS. [1962] 16p. (figs. formulae omitted).
Order from SLA $1.60 63-10030

Trans. of Schweizer Archiv [für Angewandte Wissenschaft und Technik] 1952, v. 18, Nov, p. 351-362

DESCRIPTORS: *Drills, Metals, Theory, Power.

Feeding power and twisting moment in drilling with the aid of mechanics of limiting are calculated.

Ordnance, Missiles, and Satellite Vehicles

AIR TRANSPORT AND SPACE SCIENCE. 4 Apr 63 [30]p. JPRS: 18565.
Order from OTS $0.75 63-21514

Trans. of Stiinta si Technica (Rumania) 1962, v. 14, no. 9, p. 9-10 and no. 11, p. 8-9, 14-16, 24-25, 45.

DESCRIPTORS: *Space medicine, Space capsules, *Life support, *Oxygen equipment, Water, Temperature, Pressure, Humidity, *Transport planes, Turbojet engines, Design, Construction, *Mars probes, Scientific satellites, Interplanetary trajectories, Command guidance, Radio communication systems, Photography, *Internal combustion engines, Rotation, Pistons, Design, Mechanical engineering.

Contents:
Living in space, by T. Ion
IL-62: the winged giant, by Ion Trofin
On the way to the planet Mars: Mars-1, by Fl. Zaganescu
The engine of tomorrow: Rotating or reciprocating piston, by Louis Rubel?

Vinogradov, B. A., Rodionov, V. N., and Shemyakin, E. I.
FLIGHT OF SPERICAL VOLUME OF GROUND DURING EXPLOSION IN THE CENTER OF SYMMETRY, tr. by Sergey Shewchuck. July 62 [13]p. 3 refs.
Order from OTS or SLA $1.60 UCRL Trans-859 (L)

Trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1961, no. 3, p. 36-42.

DESCRIPTORS: *Underground explosions, Explosion, Explosion effects, Soils, Compressive properties, Plasticity, Motion, Shaped charges, Charges (Explosives), Spheres, Shock waves, Equations of motion, Velocity.

The flight of the spherical volume of ground is studied under the effect of the explosion products of a charge located in the center of a sphere. The results obtained are used for calculating the maximum velocities of ground lift, in the epicenter during explosion for throwout. (Author)

Zhongolovich, I. D. and Pellinen, L. P.
THE MEAN ELEMENTS OF ARTIFICIAL EARTH SATELLITES (Srednie Elementy Iskusstvennykh Sputnikov Zemli) tr. by J. W. Palmer. Aug 62 [23]p. 8 refs. RAE Library Trans. 1006; AD-284 245.
Order from OTS or SLA $1.60 63-15406

Trans. of [Akademiya Nauk SSSR. Institut Teoreticheskoi Astronomii. Byulleten'] 1962, v. 8, no. 6(99) p. 381-395.

DESCRIPTORS: *Satellite vehicle trajectories, Perturbation theory, Celestial mechanics, Mathematical analysis, Orbital flights paths, Satellite vehicles, Oscillation.

One of the possible definitions for the mean elements of artificial earth satellites is given. Relations are deduced between mean and osculating elements for any place in the orbit and for the particular case of the node. Total perturbations of the mean elements are determined for one draconic period and formulae are given for the mean rate of variation of the mean elements correct to the second order. It is shown that the secular terms of the last formulae for argument of perigee and for node are consistent with conclusion obtained by other investigators (Garfinkel, Kozai, Brouwer, Proskurin and Batrakov) using different methods. (Author)

Sanitation and Safety Engineering

ASPIRATOR FOR TAKING AIR SAMPLES: MODEL 822. 25 Mar 63 [11]p. JPRS: 18345.
Order from OTS $0.50 63-21418

Trans. of mono. (manual) Aspirator dlya Otbora Prob Vozdukha: Model' 822, Leningrad, 1961, 14p.

DESCRIPTORS: Instrumentation, *Gas analysis, *Air, Impurities, Gas filters, Atmospheric pollution, Operation, Construction.

The aspirator is intended for taking air samples in industrial and other buildings in order to study and analyze the air. The device has an air blower developing a negative pressure, rotameters for measuring the rate of the air's passage, and a component for controlling the rate of the air's passage.

Hoekstra, James.
PROCESS FOR THE OXIDATION OF COMBUSTIBLE SUBSTANCES CONTAINED IN A CURRENT OF RESIDUAL GAS. [1962] 21p.
Order from OTS or SLA $2.60 62-18503

Trans. of Belgian patent 606,488, 25 July 61, by Universal Oil Products Co (International convention: patent appl. filed USA, 27 July 60).

DESCRIPTORS: *Exhaust gases, *Oxidation, *Atmospheric pollution, Waste gases, Hydrocarbons, Combustion, Reduction, Catalysts.

Juda, Jan and Budzinski, Karol.
ATMOSPHERIC POLLUTION. 31 Mar 63 [267]p. 147 refs. JPRS: 18455.
Order from OTS $4.00 63-21460

Trans. of mono. Zanieczyszczenia Atmosfery, Warsaw, 1961, 256p.

DESCRIPTORS: *Atmospheric pollution, Damage, Sources, Wastes (Industrial), Scattering, *Poland, Meteorological parameters. Tables, Test methods, Sanitary engineering, Aerosols

Contents:
Systematic classification of atmospheric pollutants
Sources of atmospheric pollutants
Damage caused by atmospheric pollution
Aerosol mechanics
The influence of meteorological conditions on the dispersion of pollutants
Dispersion of pollutants in the atmosphere
Methods of measuring atmospheric pollution
Determination of pollutant emission
Estimation of dustfall
Determination of particulate matter concentration in air
Determination of gaseous air pollutants

Voit, R.
SAFE HANDLING OF OXYGEN. [1962] [23]p.
Order from SLA $2.60 62-20202

Trans. of Linde Ber[ichte] aus Techn[ik] u[nd] Wiss[enschaft] (West Germany) 1960, no. 9, p. 46-55. Another trans. is available from BISI £5 5s as BISI-2080 [1961].

DESCRIPTORS: *Oxygen, *Hazards, *Fire safety, Explosions, Accidents, Lubricants, Acetylenes, Compressors.

The following problems are considered: (1) investigation of the hazards which are inherent in the condensation of air and in the separation of its constituents; (2) determination and elimination of the causes of fires and of injuries to the operating personnel in oxygen plants not related to plant damages; and (3) investigation and elimination of the causes of fires and explosions in oxygen valves, lines and plants.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Robinson-Görnhardt, L.
THE TESTING OF THE EFFECT OF PACKING MATERIALS ON THE ODOR AND TASTE OF FOODS. [1962] 16p.
Order from K-H $20.00 K-H 8025 b

Trans. of Verpackungsrundschau (West Germany) [1957] v. 8, no. 9, p. 65-69.

DESCRIPTORS: Test methods, *Packaging, Materials, Taste, Odors, *Food, Containers.

Food

Agabal'yants, G. G., Kozenko, E. M., and Merzhanyan, A. A.
THE ABSORPTIVE CAPACITY OF WINE FOR CARBON DIOXIDE GAS. [1962] [12]p. 10 refs.
Order from OTS or SLA $1.60 62-20154

Trans. of Vinodelie i Vinogradarstvo SSSR, 1954, v. 14, no. 6, p. 26-32.

DESCRIPTORS: *Wines, Absorption, *Carbon dioxide, Gases, Beverages.

Chierici, L. and Sardella, M.
CONTRIBUTION TO THE STUDY OF THE AROMA OF ARTIFICIAL COFFEE: PRELIMINARY NOTE. [1962] 9p.
Order from K-H $11.25 K-H-12595

Trans. of Chimica, Milan (Italy) 1953, v. 8, p. 119-121

DESCRIPTORS: *Coffee, *Substitutes, *Odors, Smell.

Olenev, Yu. A. and Livshits, S. A.
DRYING MEAT BY THE SUBLIMATION METHOD (Sushka Myasa Metodom Sublimatsii) tr. by E. C. B.P. 11 Feb 63, 7p. (figs. refs. omitted) 1 ref. I-8203.
Order from OTS $0.50 63-11576

Trans. from Kholodil'naya Tekhnika (USSR) 1962 [v. 39, no. 4].

DESCRIPTORS: *Meat, *Beef, Sublimation, Freezing, *Dehydrated foods, Aging, Processing, *Preservation.

The beef used for sublimational drying in a raw state, must be first allowed to age for 11-14 days at 0°. Prior to drying, the meat must be quickly frozen to -18+ -20° in a rapid freezing device or chamber at a temperature of -30° If there is no rapid freezing device and low temperature chamber available, the meat should be subjected to "mixed" freezing. The most effective of the studied methods of heating meat in sublimational drying is that of drying it on plates with rods. The duration for drying pieces of meat with a thickness of 20 mm, at a sublimation temperature of -15+ -18° and a surplus pressure in the sublimator of 0.8-1.0 mm of the mercury column does not exceed 8 hours. The joint use of all of the given recommendations will permit the production of a finished product having a good quality which, after restoration, will differ but little from the control sample (subjected to freezing only).

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 54 (MACHINE BUILDING SERIES). 5 Apr 63 [7]p. JPRS: 18580.
Order from OTS $0.50 63-21523

Trans. of selected abstracts from Referativnyi Zhurnal. Mashinostroenie (USSR) 1962, nos. 22-24.

DESCRIPTORS: Abstracts, Literature, *China, *Machines, Automation, Grinders, *Lubricants, Machine tools, Plastics

DEVICE FOR THE STRAIGHTENING OF PROFILED IRON BARS. 23 Mar 54, 3p. (figs. omitted).
Order from OTS or SLA $1.10 62-18449

Trans. of German patent 349,328, 1 Mar 22, cl. 7d, gr. 1, pat. from 15 May 19, by Rex Works A.G. (Ltd.) previously Gabler and Wrede, Glauer and Co.

DESCRIPTORS: *Material forming, *Rods, Iron, Machines.

ELECTROMOTIVE DRIVE FOR A WINDING (COILING) DEVICE. [1962] 3p.
Order from OTS or SLA $1.10 62-18468

Trans. of German patent 710,365, 11 Sep 41, cl. 21c, gr. 6260, granted 31 July 41, pat. [from] 24 Feb 39.

DESCRIPTORS: *Coils, *Electromagnetic drives, *Wire-winding machines.

PROCEDURE AND DEVICE FOR PRODUCTION OF WHEELS FOR RADIAL TURBINES. [1962] 7p.
Order from K-H $8.75 K-H 10516

Trans. of Swedish patent 77606, n. d.

DESCRIPTORS: *Turbine wheels, Production, Turbines.

SUCTION CONVEYOR FOR THE BUNCH WRAPPER AND WRAPPER IN CIGAR AND CIGARILLO WRAPPING MACHINES, tr. by J. R-P. 7 Nov 62, 4p. (figs. omitted).
Order from OTS or SLA $1.10 63-13431

Trans. of Swiss patent 71,324, cl. 35b, by Internationale Cigarrenmaschinen-Gesellschaft m.b.H., pub. 16 Dec 15.

DESCRIPTORS: *Tobacco, *Conveyors, *Machines, Packaging.

TECHNOLOGY OF MACHINE CONSTRUCTION: SELECTED ARTICLES. 7 Nov 62 [26]p. (graphs omitted) 16 refs. FTD-TT-62-1248.
Order from OTS or SLA $2.60 63-13923

Unedited rough draft trans. of mono. Tekhnologiya Mashinostroeniya, issued by Kubyshev Aviatsionnyi Inst., 1960, p. 61-79.

DESCRIPTORS: *Machines, Construction, Metals, *Mechanical working, *Steel, Microstructure, Grinders, *Heat resistant alloys, *Nickel alloys, Spark machining.

Contents:
Investigating the depth of the cold-hardened layer obtainable in grinding, by V. T. Dudnikov
Investigation of some technological characteristics of electric spark working of heat-resistant alloys on a nickel base, by V. P. Aleksandrov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CONSTRUCTION MACHINERY NO. 27. 14 Mar 63 [47]p. JPRS: 18134.
Order from OTS $1.25 63-21326

Trans. of Molodoi Kommunist (USSR) 1962 [v. 20, no. 12] p. 69-72; and 14 selected articles from Sep-Dec 62 issues of 3 Russian newspapers.

DESCRIPTORS: *Industrial production, *Construction, *Machines, Refineries, *Tractors, Excavators, Earth-handling equipment, Labor, *Drilling machines, Petroleum industry, Chemical industry, Steel.

Contents:
Planning for chemical machine construction, by V. Makarov
New machinery for the petroleum industry, (Machinery, Fabrications and Accessory Equipment, by Ya. F. Korneev
Problems in the chemical industry
Orders accepted to manufacture equipment, want ads, and items for sale

For sale
Help wanted
An electric tractor travels underground, by Ya. Bukhman
Machine defects delay canal construction, by M. Inyushin and A. Chemin
Excavator digs into the breast of the mine
Powerful excavator
More materials requested for machine building
Classified advertisements
The installation of outmoded drilling rigs
New steel pouring ladle
Personnel shortages in Moscow construction plants, by A. Baryshnikov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CONSTRUCTION MACHINERY NO. 29. 22 Mar 63 [28]p. JPRS: 18288.
Order from OTS $0.75 63-21386

Trans. from Lesnaya Promyshlennost' (USSR) 1962, 2 Feb, p. 2; 5 Feb, p. 2; Stroitel'naya Gazeta (USSR) 1963, 30 Jan, p. 3; Izvestiya (USSR) 1962, 18 Dec, p. 1; Pravda, Moscow (USSR) 1962, 6 Dec, p. 1; no. 358(16214) 24 Dec, p. 2; and one article from an unidentified issue of Agitator (USSR) p. 31-33 (excerpts).

DESCRIPTORS: *Industrial production, *Construction, *Road building equipment, *Excavators, *Industrial equipment, *Machines, Drilling machines, Management engineering, *Wood, Handling, *Snow vehicles, *Arctic regions, Machine shop practice.
(Machinery, Fabrications and Accessory Equipment,

Contents:
New road machines and excavators, by A. Mitrofanov
Weaknesses of Soviet excavators
Complaint about administrative manipulation for control of machine shop, by V. Ponedel'nik
Activities of the Novokramatorsk machine-building plant, by D. Akul'shin
Heavy equipment developed by the "Uralmash" Scientific Research Institute, by O. Sokolovskii
Timber-loaders produced at the Krasnoyarsk machine-building plant
Research and development of Arctic-polar and other heavy equipment at the Gor'kii polytechnic institute, by K. Pogodin.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CONSTRUCTION MACHINERY NO. 30. 26 Mar 63 [7]p. JPRS: 18370.
Order from OTS $0.50 63-21426

Trans. of Mekhanizatsiya i Avtomatizatsiya Proizvodstva (USSR) 1962 [v. 16] no. 12, p. 54; and Mashinostroitel' (USSR) 1963, no. 1, p. 28 and 30.

DESCRIPTORS: *Industrial production, *Construction, Hoists, *Road building equipment, Standardization, *Industrial equipment, *Machines

Contents:
1962 progress report on efforts and plans to standardize heavy construction equipment
New construction equipment.

USSR INDUSTRIAL DEVELOPMENT: SOVIET POWER MACHINERY NO. 10. 14 Mar 63 [35]p. JPRS: 18133.
Order from OTS $1.00 63-21325

Trans. of Energomashinostroenie (USSR) 1963, v. 9, no. 1, p. 1-2 (excerpt) and 7 selected articles from Oct-Nov 62 issues of 3 Russian newspapers.

DESCRIPTORS: *Industrial production, *Steam turbines, *Machines, *Boilers, *Turbines, Electric power production, Power, *Power plants.

Contents:
Power machine-building problems in light of the decisions of the CPSU Central Committee Nov Plenum
Steam turbines, by Yu. Zakharov
Problems with steam boilers, by F. Kokh and V. Yasinskii
(Machinery, Fabrications and Accessory Equipment,
Increasing the output of machinery, by G. Shcherban'
New turbines placed in operation
Turbines and motor parts
Small-sized progressive, economical, steam boilers, by G. Ogloblin and V. Mitov
New powerful turbines.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 61. 4 Apr 63 [25]p. JPRS: 18563.
Order from OTS $0.75 63-21512

Trans. of Novye Tovary (USSR) 1963, no. 1, p. 2-10 and 15.

DESCRIPTORS: *Industrial production, *Precision equipment, Reaction, *Vacuum cleaners, *Radio receivers, Refrigeration systems, *Television receivers, *Photographic enlargers, *Photographic equipment, Music, Transistors, Photography.

Contents:
Judging the quality of manufactured consumer goods
Products of the Leningrad Metalloizdelii and Elektromet plants, by L. Khnycheva
New consumer goods in the Dnepropetrovskii sovnarkhoz
(Machinery, Fabrications and Accessory Equipment,
by S. Mikhalev and S. Proskuryakov
New production at the Dnepropetrovsk radio plant, by K. Minskii
New production at the Minsk radio plant, by B. Semashko
The new fotokonstruktor do-it-yourself photography kit, by K. Gol'din
The new Kiev-7 pocket transistor radio
The Fizelektropribor plant has started producing a do-it-yourself transistor radio kit, by D. Grozdova
New UPA-4 photographic enlarger, by S. Arkharova
The Petrodvorets timepiece plant manufactures music boxes, by A. Ivanov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 62. 5 Apr 63 [19]p. JPRS: 18572.
Order from OTS $0.50 63-21517

Trans. of Novye Tovary (USSR) 1963, no. 2, p. 1, 5-7, 11; Gazovaya Promyshlennost' (USSR) 1963 [v. 8] no. 2, p. 49-50.

DESCRIPTORS: *Industrial production, *Precision equipment, *Magnetic recording systems, *Refrigeration systems, *Heaters, Electricity, Flash lamps, *Photographic equipment, *Compressors, *Rectifiers (Photography), Automatic, *Control systems.

Contents:
The modernized "Yauza-5" tape recorder
The Moldavian "Nistru" refrigerator, by L. Korenblat
"Rucheek" electric water heater, by V. Gurevich
New "fil" products, by V. Bryukkel'
Film negative winder produced by "KINAP" plant
MK-1 microcompressor for aeration of water
VF-300 rectifier for powering electronic flash lamps, by A. Freiman
Answer to criticism of certain products manufactured in Moscow City sovnarkhoz
Types and trademarks of automatic control instruments for production processes, by D. Ya. Vigdorchik.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 63. 8 Apr 63 [59]p.
JPRS: 18598.
Order from OTS $1.50 63-21531

Trans. of Radio, Moscow (USSR) 1962, no. 10, p. 29 and 64; and 12 selected articles from Oct 62 and Jan-Feb 63 issues of 11 Soviet newspapers.

DESCRIPTORS: *Industrial production, *Precision equipment, *Plastics industry, *Seismographs, *Radio receivers, Automatic, *Control systems, Labor, Radioactive isotopes, Measurement, *Microphotography, *Television receivers, Maintenance, *Spectrographic cameras, Radio equipment, Petroleum, *Typewriters, Rock.

Contents:
Specialization and concentration in the plastics industry, (Machinery, Fabrications and Accessory Equipment, by N. Fedorenko and M. Yakovlev
Search for petroleum by blasting-prospecting instruments made by the Moscow Neftepribor plant, by B. Ol'shevskii
Pocket radio receivers for shepherds, by V. Koshelev
Moscow electronics: automatic control systems built by Tizpribor plant, by V. Sinedubskii
Principal reserve: workers' initiative at the vibrator plant, by A. Savosin
The atom in the service of peace: All-Union Seminar on Radioisotopic Measuring Techniques in Tbilisi
Microfilm apparatus designed by the Moscow Engineering Design Bureau for Moving Picture Equipment
Servicing television sets, by V. Andreev
Spectrographic analysis of rocks in Tadzhikistan, by G. Evgen'ev
Labor productivity at the protable typewriter plant, by P. Arzamastsev
Sales advertisement of the Nal'chikTsvetmetpribor plant
"Volga" radio-phonograph, by B. Ckhlopkov
"Kontsertnyi-2" radio-phonograph built by the Moscow Electrical Machine Building Plant.

Basko, P. T.
LIFE OF DRILLS EXTENDED BY CHEMICAL NICKEL PLATING. Feb 63, 600 words.
Order from HB $2.50 HB-5855

Trans. of #Stanki i Instrument (USSR) 1963 [v. 34] no. 1, p. 43.

DESCRIPTORS: *Nickel plating, *Drills, Life expectancy, *Machine tools.

Drouard, Francis and Bayle, Gabriel.
MACHINE FOR GRINDING RAILS (GRINDER). 25 Feb 63, 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-15772

Trans. of French patent 891,884, gr. 3, cl. 1, appl. filed 14 Nov 42, granted 17 Dec 43, pub. 22 Mar 44.

DESCRIPTORS: *Grinders, *Machines, *Railroad tracks, Design.

This invention relates to a machine for the removal of irregularities from railway rails, characterized mainly in that the latter consists of a frame capable of sliding on the rail, said frame comprising special members which plane said irregularities. (Author)

Khaimovich, E. M.
CERTAIN QUESTIONS OF THE THEORY AND COMPUTATION OF A HYDRAULIC FOLLOWING DEVICE FOR METAL-CUTTING MACHINES [Nekotorye Voprosy Teorii i Rascheta Gidrovlicheskikh Sledyashchikh Ustroistv Metallorezhushchikh Stankov]. [1961] 12p. 9 refs. MDF K-110.
Order from OTS or SLA $1.60 62-23187

Trans. of [Akademiya Nauk SSSR]. Seminar po [Teorii] Mashin [i] Mekhan[izmov]. Trudy [1954] v. 14, no. 56, p. 48-58.

DESCRIPTORS: *Machines, *Cutting tools, Metals, *Hydraulic servomechanisms, Numerical analysis.

Krejci, J.
TESTS WITH A HUNGARIAN AUTOMATIC STAPLER (STAPLE-LENGTH METER). [1963] 8p.
Order from ATS $12.00 ATS-10Q67C

Trans. of Textil (Czechoslovakia) 1960, v. 15, no. 11, p. 415-418.

DESCRIPTORS: *Staplers, Automatic, Tests, *Hungary.

Pawelski, O. and Lueg, W.
EXPERIMENTS AND CALCULATIONS ON DRAWING AND PUSHING-IN OF ROUNDS. Dec 62.
Order from BISI 5 15s BISI-2894

Trans. of Stahl und Eisen (West Germany) 1961, v. 81 [no. 25] p. 1729-1739.

DESCRIPTORS: Steel, *Drawing (Machine processing) Mechanical working, *Dies.

Sachsenberg, E. and Plauert, A.
CIRCULAR SAWS FOR CUTTING LIGHT METALS. [1962] 4p. (figs. omitted).
Order from SLA $1.10 63-10047

Trans. of [Werkstattstechnik und Maschinenbau] (Germany) 1940 [v. 34, no. 5] p. 75-77.

DESCRIPTORS: *Circular saws, *Cutting tools, Metals.

Machine Parts and Mechanisms

BALL-BEARING OR ROLLER-BEARING THE INTERNAL RUNNER RING OF WHICH IS FASTENED TO THE SHAFT BY MEANS OF AN ELASTIC INTERMEDIATE MEMBER. [1962] 3p.
Order from K-H $3.75 K-H 10317

Trans. of Dutch patent 29525, n.d.

DESCRIPTORS: *Ball bearings, *Roller bearings, Shafts, Fastenings, Flexible couplings.

FLEXIBLE TUBE TOGETHER WITH METHOD FOR PRODUCTION OF THE SAME. [1962] 4p.
Order from K-H $5.00 K-H 10294

Trans. of Swedish patent 138,532, n.d.

DESCRIPTORS: *Pipes, Hoses, Flexible couplings, Production.

Michel, E. and Sommer, P.
INFLUENCE OF THE STEEL ON THE SERVICE LIFE OF GUDGEON PINS. Feb 63.
Order from BISI £6 BISI-3087

Trans. of Archiv für das Eisenhüttenwesen (Germany) 1944, v. 17 [no. 3] p. 227-234.

DESCRIPTORS: *Steel, Mechanical properties, Heat treatment, Tests, Life expectancy.

Semichastnov, I. F.
EQUIPMENT AND OPERATION OF A HYDRAULIC TRANSMISSION OF A DIESEL LOCOMOTIVE. [1962] 12p. (figs. omitted).
Order from OTS or SLA $1.60 62-18784

Trans. of Elektricheskaya i Teplovoznaya Tyaga (USSR) 1958,[v. 2] no. 6, p. 23-26.

DESCRIPTORS: Locomotives, Diesel engines, *Hydraulic systems, *Transmissions, Design, Operation

Yakushev, A. I.
DEPENDENCE OF THE STRENGTH OF THREADED JOINTS ON THE HARDNESS OF THE MATERIAL IN THE BOLTS AND STUDS (Zavisimost' Prochnosti Rez'bovykh Soedinenii ot Tverdosti Materiala Boltov i Shpilek). [1962] [9]p. (foreign text included) 2 refs.
Order from OTS or SLA $1.10 62-18746

Trans. of Vestnik Mashinostroeniya (USSR) 1954, v. 34, no. 12, p. 3-6.

DESCRIPTORS: *Fastenings, *Bolts, *Rivets, *Screw threads, *Metal joints, Hardness, Tensile properties, Statics, Fatigue (Mechanics), Helixes.

It is shown that static and fatigue strength of threaded connections, unlike strength of samples with sharp notches, increases as the hardness of the material increases. This difference is explained by the unloading effect of the threads, which are multiple grooves pressed along a helix. (Author)

Manufacturing Equipment and Processes

METHOD AND DEVICE FOR SHAPING MATERIAL. [1962] 9p.
Order from K-H $11.25 K-H 10565b

Trans. of Swedish patent 115846, addition to patent 105422, n.d.

DESCRIPTORS: *Material forming, Industrial equipment.

PROCESS FOR THE MANUFACTURE OF HOLLOW OBJECTS. [1962] 6p.
Order from K-H $7.50 K-H 10483

Trans. of Swedish patent 94212, n.d.

DESCRIPTORS: *Material forming, *Material removal, Manufacturing methods.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET METALWORKING EQUIPMENT NO. 23. 6 July 62 [15]p. JPRS: 14397.
Order from OTS or SLA $1.60 63-15710

Trans. from Izvestiya (USSR) 1962, 14 Feb; Trud, Moscow (USSR) 1962, 15 Feb; Ekonomicheskaya Gazeta (USSR) 1962, no. 7(28); no. 8[29] p. 36; no. 9[30] p. 24.

DESCRIPTORS: *Industrial production, *Machine tools, Manufacturing methods, Creep, *Gears, *Automation, *Rolling mills, Pipes, *Lathes, *Forge presses, *Axle shafts, Cutting tools, Machines, Precision equipment, Deformation.

Contents:
Plastic deformation methods for gears
A speed-up in gear cutting, by G. Aleksandrov
Metal-cutting machines of the future, by G. Zakharov
Thousands of new automatic lines
High-speed precision axle forging, by I. Kondrat'ev.

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 36. 2 Apr 63 [13]p. JPRS: 18496.
Order from OTS $0.50 63-21478

Trans. from Lesnaya Promyshlennost' (USSR) 1963, 28 Feb, p. 3 and Sovetskaya Estoniya (USSR) 1962, 2 Nov, p. 2-3.

DESCRIPTORS: *Industrial production, Economics, *Construction, Machines, Pipes, Buildings, Manufacturing methods, Industrial plants, Industrial equipment.

Contents:
Construction deadlines at the Nizhnedneprope trovsk machine building plant imeni Artem grossly violated, by D. Pisarev and others
Capital construction improvements in Estonian sovnarkhoz, by V. Gotskii.

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 37. 4 Apr 63 [13]p.
JPRS: 18543.
Order from OTS $0.50 63-21501

Trans. of Narodnoe Khozyaistvo Kazakhstana (USSR) 1962 [v. 20, no. 10] p. 4-5; and from Sovetskaya Estoniya (USSR) 1962, 9 Oct, p. 3; Zarya Vostoka (USSR) 1962, 9 Oct, p. 3; Sovetskaya Moldaviya (USSR) 1962, 13 Oct p. 2.

DESCRIPTORS: *Industrial production, Economics, Management engineering, *Industrial equipment, *Electric welding, Welding, Industries.

Contents:
Measure for the introduction of new production methods required, by Ya. Nezhinskii
Kazakh industrial development
Electro-welding to be developed in the Transcaucasus, by V. Didebulidze
Plan fulfillment on important projects.

Charvat, Vernon Kenneth.
COMPOSITION AND METHOD FOR THE MANUFACTURE OF GRINDING WHEELS AND SIMILAR ARTICLES. [1962] 12p. (figs. omitted).
Order from OTS or SLA $1.60 62-20421

Trans. of French patent 1,286,109, appl. no. 853,779, filed 24 Feb 61, gr. 22 Jan 62 (U. S. priority no. 12,303, 2 Mar 60) by The Osborn Manufacturing Co., U. S. A. (pub. in Bull[etin] Off[iciel de la] Propriété Industrielle (France) 1962, no. 9).

DESCRIPTORS: *Manufacturing methods, *Grinding wheels, Abrasives, Binders, Plastics, Silicon compounds, Carbides, Powders, Centrifugal casting.

The invention, relating to the manufacture of grinding wheels, concerns in particular the production of such articles and of others in which a granular abrasive is incorporated or supported by a binder based on a synthetic resin. More particularly, the composition being the object of this invention is intended for the manufacture of grindstones and similar objects by means of centrifugal molding of these objects, that is by a method consisting of shaping them in an appropriate mold which is, at the same time, driven by rapid rotation in order to subject the composition to the action of a centrifugal force. More particularly, the invention has for its purpose to make use of a composition in which the binder is a foam resin that can be gelled just as a foam polyurethane. (Author)

Günther, H.
AUTOMATIC WELDING PROCESS WITH MAGNETICALLY CONTROLLED ARC FOR THE WELDING OF PIPE LINES. [1962] [28]p. 12 refs.
Order from SLA $2.60 62-20091

Trans. of Schweissen u[nd] Schneiden (West Germany) 1958, v. 10, no. 10, p. 385-394.

DESCRIPTORS: Automatic, *Arc welding, *Pipes, Industrial equipment, Electromagnets

The present report covers an automatic "fire cracker" butt welding process which makes it possible to produce perfect root and finishing beads in any welding position. Its mode of operation is based on the control of the arc column by auxiliary magnetic fields whose theory is explained. A description is given of the equipment which has been developed and field-tested with pipe diameters of up to 300 mm. The account includes the sequence of operations before, during, and after welding, and pays particular attention to the tolerances required for the production of satisfactory welds.

Larsson, T., Brauns, O., and Larsson, T.
HIGH EFFICIENCY HOODS FOR MULTI-CYLINDER DRYING I. LITERATURE SURVEY. II. MACHINE EXPERIMENT. July 62, 19p. (figs. omitted) 13 refs.
Order from SLA $1.60 62-18709

Trans. of Svensk Pappers-tidning, 1962, v. 65, no. 5, p. 164-172 and no. 12, p. 488-493.

DESCRIPTORS: *Paper, Manufacturing methods, *Driers (Apparatus), Design, Operation, Cylindrical bodies.

Laubmeyer, G.
CURRENT PROBLEMS OF INDUSTRIAL SOFT-SOLDERING TECHNIQUE. [1962] 46p.
Order from SLA $4.60 63-10152

Trans. of unidentified German mono., Arolsen, May 1960.

DESCRIPTORS: *Soldering, Soldered joints, Soldering fluxes, Experimental data, Corrosion, Mechanical properties.

Office of Technical Services, Dept. of Commerce, Washington, D. C.
CONTINUOUS CASTING - FOREIGN LITERATURE. Feb 63, 7p. 63 refs. OTS Selective Bibliography SB-513.
Order from OTS $0.10 OTS SB-513

DESCRIPTORS: *Bibliography, *Casting.

Lists 63 references to translations on continuous castings. Covers automatic casting, flow patterns, effects of cooling, shrinkage phenomenon, investigation by radioisotopes, casting of tubes, casting of aluminum wire and a world list of installations among other subjects. (Author)

Office of Technical Services, Dept. of Commerce, Washington, D. C.
WELDING (SUPPLEMENT TO CTR'S 324-331). Jan 63, 35p. 783 refs. OTS Selective Bibliography SB-402, rev.
Order from OTS $0.10 OTS SB-402, rev.

DESCRIPTORS: *Bibliography, *Welding, Electron beams, Ultrasonic radiation, Spot welding, Arc welding, Electric welding.

Lists 783 references to WELDING added to the OTS collection during the period 1957 to January 1963. Covers new developments in welding such as plasma, electron beam, ultrasonic, fusion, resistance, spot, arc, friction and cold welding among other subjects. (Author)

Singer, Felix.
PROCEDURE FOR THE REGULATION OF THE DEVITRIFICATION OF MELTS. [1962] [7]p. (foreign text included).
Order from OTS or SLA $1.10 62-18519

Trans. of German patent 570,148, cl. 80 b, gr. 504, S 94417 VI/80 b, appl. 17 Oct 28, granted 26 Jan 33, issued 11 Feb 33.

DESCRIPTORS: *Slags, *Glass, *Ceramic materials, Melting, Crystallization

The invention involves a procedure for the regulation of the devitrification of melts, glasses, slags etc., with the exception of crystal glazes which are applied in the shape of thin layers upon ceramic and other masses, by the addition of crystallizers characterized in that one adds to the reaction mixture several, at least two, mineralizers, which belong to different groups of the periodic system. Of the mineralizers applied, at least two belong to the same period of the periodic system. The temperature of the melting is kept rather constant for at least one hour, or kept at least approximately constant. (Author)

Witthoff, J.
CALCULATION OF OPTIMUM WORKING CONDITIONS FOR METALS CUTTING. [1962] 19p. (figs. formulae tables omitted).
Order from SLA $1.60 63-10045

Trans. of Werkstatt und Betrieb (West Germany) 1947 [v. 80, no. 4] p. 77-84.

DESCRIPTORS: *Machine shop practice, *Cutting tools, Metals, Economics

Zubkov, B.
CUTTING TOOLS, FIRE, WATER, POWDER. 9 Nov 62 [14]p. FTD-TT-62-1357.
Order from OTS or SLA $1.10 63-15326

Unedited rough draft trans. of Znanie-Sila (USSR) 1961, v. 36, no. 11, p. 11-14.

DESCRIPTORS: Material forming, Machine tools, *Cutting tools, *Explosive forming, Electroerosive machining, *Electrolytic polishing, *Electron guns, Electron beams, Spark machining, *Hydroforming.

USSR INDUSTRIAL DEVELOPMENT: SOVIET AUTOMOTIVE INDUSTRY NO. 28. 25 Mar 63 [34]p. JPRS: 18361.
Order from OTS $1.00 63-21423

Partial trans. of Novye Tovary (USSR) 1962, no. 11, p. 18; Nauchno-Tekhnicheskie Obshchestva SSSR, 1963, [v. 5] no. 1, p. 44; [Leninskoe] Znamya (USSR) 1963, no. 9, 11 Jan, p. 2; and 7 selected articles from 62-63 issues of 7 Russian newspapers.

DESCRIPTORS: *Industrial production, *Automotive industry, *Management engineering, Tractors, Cargo vehicles, *Motorcycles, *Passenger vehicles, Vehicle chassis components, *Oil filters, *Tires, Vehicle wheels, *Ground effect machines, Industrial plants, Motorcycles, Vehicles.

Contents:
Problems of improving motor vehicle production at the Belorussian motor vehicle plant and in the Soviet vehicle industry, by O. Iatis
The MV-042 motor-bicycle
The L'vov trademark (a report from the bus plant) by O. Zlodyushko
Criticism of incentives for improving the quality of GAZ-51 trucks
Criticism of the supply of spare parts, by V. Ivanov
Criticism of Kutais motor vehicle plant trucks, by E. Ferentsev
Socialist commitments of the Minsk motor vehicle plant collective for 63
The KazSKhI oil filter, by A. Belotserkovskii
Cross-country vehicles, by V. Strelkov
Vehicles on air cushions, by L. Gil'berg.

USSR INDUSTRIAL DEVELOPMENT: SOVIET AUTOMOTIVE INDUSTRY NO. 29. 27 Mar 63 [22]p. JPRS: 18385.
Order from OTS $0.75 63-21434

Trans. of Avtomobil'naya Promyshlennost' (USSR) 1963, [v. 29, no. 2] p. 1-7.

DESCRIPTORS: *Industrial production, *Automotive industry, *Industrial plants, Automation, *Mining engineering, *Cargo vehicles, Handling, *Trailers, Design.

Contents:
Reconstruction of the Yaroslavl' motor plant, by S. A. Nikitin
Extensive use of motor transport planned, by M. V. Vasil'ev.

Potthof, G.
CYBERNETICS IN MUNICIPAL TRANSPORTATION. Lecture given at the Friedruch List Advanced School for Transportation, 5 Sep 62. 8 Apr 63 [16]p. 7 refs. JPRS: 18596.
Order from OTS $0.50 63-21530

Trans. of Deutsche Eisenbahntechnik (East Germany) 1963 [v. 11] no. 1, p. 7-12 and 40.

DESCRIPTORS: *Cybernetics, *Transportation, Control, *Management engineering, Economics.

The questions of cybernetics occuring in municipal transportation can be subdivided into those affecting the operation of the individual vehicle or train, so those which further treat the interaction of several vehicle or train runs in a time table net and those finally which concern themselves with the operational management of the entire transportation system. Examples show the possibilities already successfully realized and the tasks incumbent on the future. (Author)

Venediger, H. J.
GERMAN POSTWAR DEVELOPMENT PROBLEMS. [1962] 22p.
Order from K-H $27.50 K-H 6877 c

Trans. of ATZ [Automobiltechnische Zeitschrift] (Germany) 1948 [v. 50] no. 1 [p. 4-9].
Another trans. is available from SLA $2.60 as 62-10324 [1961] 22p.

DESCRIPTORS: *Automotive industry, *Vehicles, *Passenger vehicles, *Motorcycles, Production.

MATERIALS

COLD-DRAWN DEFORMED STEEL WIRE FOR PRESTRESSED REINFORCED CONCRETE. [1962] 6p. [AERDL] T-189-A; [RIS] E-852.
Order from OTS or SLA $1.10 63-13253

Trans. of U.S.S.R. Government Standard GOST 8480-57, Gr. V72, approved 6-4-57, introduction deadline 1 Jan 58.

DESCRIPTORS: *Reinforced concrete, Concrete, *Reinforcing materials, Wire, Deformation, Test methods.

This standard applies to light cold-drawn carbon steel wire of a deformed cross-section with diameters from 2.5 to 8 mm intended for reinforcing of prestressed reinforced concrete structures. The deformed wire represents steel of a round cross-section with indentations on two sides parallel to the longitudinal axis.

HOT DIP MATERIALS. 27 Feb 63.
Order from TTIS $9.00 TTIS-2439

Trans. of German patent 926,022, by Farbenfabriken Bayer AG, appl. 27 Jan 52, pub. 10 Mar 55.

DESCRIPTORS: Hot working, *Materials.

METHOD AND DEVICE FOR THE MANUFACTURE OF INSULATING TILE FROM PEAT MOSS. [1962] 6p.
Order from K-H $7.50 K-H 12462

Trans. of Swedish patent 69,349 [1926].

DESCRIPTORS: *Mosses, *Peat, *Insulating materials, *Tiles, Manufacturing methods.

Barbarina, T. M., Sukhov, M. P., and Sheludyakov, N. A.
FIBERGLASS BUILDING MATERIALS. 26 Mar 63 [176]p. 45 refs. JPRS: 18380.
Order from OTS $3.00 63-21431

Trans. of mono. Steklovoloknistye Stroitel'nye Materialy, Moscow, 1961, 168p.

DESCRIPTORS: *Glass textiles, *Construction materials industry, Structural parts, *Acoustic insulation, *Thermal insulation, *Plastics, Pipes, Production, Roofs, Reinforcing materials, Structural properties, Mechanical properties, Chemical analysis.

Contents:
Principal types of fiberglass building materials
Physico-mechanical and chemical properties of fiberglass and fiberglass products
Physico-chemical properties of fiberglass-reinforced plastics
Fabrication of fiberglass and fiberglass products
The production of fiberglass-reinforced plastics
Uses of fiberglass products in construction

Doucerain, M.
ELECTRONIC HEATING: APPLICATION TO THE THERMAL TREATMENT OF WOOD, RUBBER, AND PLASTIC MATERIALS. [1962] 15p. (18 figs. refs. omitted).
Order from SLA $1.60 62-18157

Trans. of Soc[iété] Francaise des Électriciens. Bull[etin] 1946 [ser. 6] v. 6, no. 62, p. 498-509.

DESCRIPTORS: *Induction heating, *Wood, *Rubber, *Plastics, Temperature, Heat treatment, Thermodynamics.

Matting, Alexander and Hahn, Karl Friedrich.
PROPERTIES OF METAL ADHESIVES AND THE BEHAVIOUR OF LIGHT-METAL ADHESIVE JOINTS (Eigenschaften von Metallklebern und das Verhalten von Leichtmetall-Klebverbindungen). Abridged Version of a Thesis, Hannover U. (West Germany). [1962] [58]p. (foreign text included) 39 refs.
Order from SLA $5.60 62-18735

Slightly abridged trans. of V[erein] D[eutscher] I[ngenieure]. Zeitschrift (West Germany) 1959, v. 101, no. 31, p. 1448-1461.
A complete trans. is available from SLA $3.60 as 61-20936 [1961] 32p.

DESCRIPTORS: *Adhesives, *Metal joints, *Cements, Elasticity, Creep, Stresses.

For abstract see Technical Translations 7: 660, 1962.

Office of Technical Services, Dept. of Commerce, Washington, D. C.
INDUSTRIAL DIAMONDS. Jan 63, 7p. 120 refs. OTS Selective Bibliography SB-512.
Order from OTS $0.10 OTS SB-512

DESCRIPTORS: *Industrial diamonds, *Diamonds, *Abrasives, *Semiconductors, *Bibliography.

Lists 120 references on this subject added to the OTS collection during the period 1943 to January 1963. Covers foreign and domestic research on diamond dust; use as abrasive in grinding and polishing; diamond dies; reclamation of diamond waste; hardness tests; colored diamonds; synthetic diamonds; radiation damage; semiconductor properties and optical properties among other subjects. (Author)

Ceramics and Refractories

THE SEPARATION OF DRY MASSES (Die Entmischung Trockner Massen). [1962] 5p. (figs. omitted).
Order from SLA $1.10 62-20200

Trans. of Keramische Rundschau u[nd] Kunstkeramik (Germany) 1936, v. 44, p. 38-40.

DESCRIPTORS: *Ceramic materials, Mixtures, Particles, Separation.

Hollenbach, Robert Zipp.
PROCEDURE FOR THE MANUFACTURE OF ALVEOLATE (CELLULAR, HONEYCOMBED) ARTICLES. [1962] [13]p.
Order from OTS or SLA $1.60 62-18535

Trans. of Belgian patent 582, 447, 8 Sep 59, by Corning Glass Works (Priority: USA, 8 Sep 58, 759, 706).

DESCRIPTORS: *Ceramic materials, *Honeycomb cores, Sandwich construction, Binders, Manufacturing methods.

Plumat, E.
CONTROL OF THE COMPOSITION OF GLASS BY ELECTRIC CONDUCTIVITY (Contrôle de la Composition du Verre par Conductibilité Électrique). [1962] [9]p. (foreign text included).
Order from SLA $1.10 62-20238

Trans. of Silicates Industriels (Belgium) 1953, v. 18, [no. 1] p. 17-19.

DESCRIPTORS: *Glass, Electrical conductance, Quality control

Tashiro, Megumi; Soga, Naohiro; and Sakka, Sumio.
A STUDY OF THE ABSORPTION SPECTRA OF CERIUM IN GLASSES. [1962] 16p. 14 refs.
Order from SLA $1.60 62-20171

Trans. of [Yogyo Kyokaishi] (Japan) 1960, v. 68, no no. 773, p. 132-137.

DESCRIPTORS: *Glass, Silicates, Phosphates, *Cerium, *Absorption spectrum, Spectra (Visible and ultraviolet).

By preparing glasses containing cerium under various conditions, their light absorptions were investigated. As a result, the following points were established: (1) In the silicate glass, the trivalent cerium ions have an absorption band which is sharp but not very large, with a maximum at 320 m μ, and the tetravalent cerium ions have a wide and large absorption band covering the whole ultraviolet region. (2) In the phosphate glass, the trivalent ions have absorption band with maxima at 294, 245, 227 mμ and the tetravalent cerium ions form a wide absorption band extending across the whole ultraviolet region. (Author)

Fuels, Lubricants, and Hydraulic Fluids

Agroskin, A. A. and Zagrebelnaya, V. S.
THEORY OF WETTING COAL LAYERS BY ADDING TRACES OF HYDROCARBON FLUIDS, tr. by H. Burstin. Oct 55 [14]p. 2 refs. British Coke Trans. no. 44; [DSIR] NLL M. 3366.
Order from OTS or SLA $1.60 62-24811

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1945, no. 3, p. 190-202.
Abstract trans. is available from OTS or SLA $1.10 in 62-10878 [1962] 10p.

DESCRIPTORS: Fluids, *Hydrocarbons, *Coal, *Wetting agents, Molecular weight, *Coke.

Altchidjian, M. Y.
UTILIZATION OF LIQUID FUELS WITH HIGH ORGANIC SULFUR CONTENT AS A SOURCE OF ANTIDETONANT COMBUSTIBLE. [1962] 3p.
Order from SLA $1.10 63-10688

Trans. of Acad[emie] des Sciences [Paris]. Compt[es] Rend[us] France, 1926, v. 183, 22 Nov, p. 975-978 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Fuels, *Sulfur, Organic compounds, *Antiknock, Internal combustion engines, Combustion, Mineral oils

Blinov, V. I. and Khudyakov, G. N.
DIFFUSION BURNING OF LIQUIDS. [1962] [224]p. 30 refs. AERDL T-1490 a-c.
Order from OTS or SLA $15.00 63-15670

Trans. of mono. [Diffuzionnoe Gorenie Zhidkostei] Moscow, 1961, 208p.

DESCRIPTORS: *Liquids, *Combustion, *Diffusion, Tanks (Containers), Fuel tanks, Flammability, Flame propagation, Fire extinguishers, Fuels, Ignition.

The first part of the book is devoted to questions connected with the flammability and ignition of liquids. In this section an important place is occupied by a description of the properties of mixtures of liquids. The second part is devoted to the burning of liquids. The problems investigated include those connected with the shape and dimensions of the flame, pulsations, temperature, radiation and various combustion regimes. A description is given of the change in the composition of liquids during combustion and the results of measurements of burnup rates are discussed. An important place in this second part is occupied by an examination of the temperature distribution in burning liquids and by an explanation of the reasons for the appearance and development of a hot homothermic layer in burning gasoline, petroleum and certain other liquids. This section concludes with a consideration of the results of investigations into the problem of the ejection of a burning liquid during combustion and the serious consequences that may ensue. The third part of the book consists of a discussion of the mechanism of extinguishing the flames from liquids in tanks by means of foam, sprays of water and combinations of various means.

Blinov, V. I.
ON THREE REGIONS OF FLUID COMBUSTION IN TANKS. [1961] 10p. 9 refs. MDF B 114.
Order from OTS or SLA $1.10 62-19862

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya, 1956, no. 4, p. 115-121.

DESCRIPTORS: Tanks (Containers), Fuel oil, *Gasoline, Petroleum, *Combustion, Fluids.

The burn-down rate of gasoline in burners of stainless steel and in tanks prepared from sheet iron was determined in the series of experiments described. An exactly measured quantity of gasoline was poured into water in a thin-walled steel burner and the time was determined during which this gasoline burns. During the combustion, the combustion level was always in the plane of the upper edge of the burner. Such a quantity of gasoline was taken for the experiments that no noticeable distortion in the value of the average rate of combustion was introduced in the initial and final moments of combustion. During the experiments with the tanks, the combustion level of the fluid was also maintained in the plane of the upper edge of the tank and the burn-down rate was determined in terms of the combustion time of various, exactly measured, volumes of gasoline. (Author)

Isaguljanc, V. Tishkova, I., and Favorskaja.
SYNTHESIS OF INHIBITORS FOR MINERAL OILS AND MOTORS FUELS BASED ON SUBSTITUTED PHENOLS. [1962] 8p.
Order from K-H $10.00 K-H 11783

Trans. of Nafta (Yugoslavia) 1960, v. 11, [no. 10] p. 233-236.

DESCRIPTORS: *Phenols, Substitutes, *Fuel oil, *Mineral oils, Corrosion inhibition, Oils, Synthesis.

Oreshko, V. F.
INVESTIGATION OF PROCESS OF OXIDATION OF COALS. [1951] [6]p. 6 refs. Fuel Research Station NT 187; [DSIR] NLL M. 4837.
Order from OTS or SLA $1.10 62-24878

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1950, v. 70, no. 3, p. 445-448.

DESCRIPTORS: *Coal, *Oxidation, Reaction kinetics, Weight, Reduction, Peroxides.

Trifonow, I. and Toschew, G.
CHANGES IN THE PROPERTIES OF COAL AFTER PRESSING AT VERY HIGH PRESSURES. [1962] [15]p. 2 refs.
Order from SLA $1.60 62-18949

Trans. of Brennstoff-Chemie (Germany) 1940, v. 21, p. 85-87.

DESCRIPTORS: Transformations, *Cool, Chemical analysis, *High pressure research, Bitumens, Physical properties, Chemical properties.

Leather and Textiles

Kaun, Fritz.
SEWING OF CANVAS (Nähen von Planenstoffen). [1962] [6]p. (figs. omitted).
Order from SLA $1.10 63-15587

Trans. of Kunststoffe (West Germany) 1959, v. 49, no. 8, p. 430-432.

DESCRIPTORS: *Textiles, Machines, Manufacturing methods.

Krüger, H. E.
THERMO-SEALING OF SEAMS IN CANVAS (Schweissverbindhunen bei Planenstoffen). [1962] [4]p.
Order from SLA $1.10 63-15588

Trans. of Kunststoffe (West Germany) 1959, v. 49, no. 8, p. 435.

DESCRIPTORS: *Textiles, Fibers (Synthetic), Plastic coatings, Sealing compounds, Thermoplastics, Tensile properties.

Individual sealing processes are discussed in which the hot wedge process and the high frequency sealing process are discussed for sealing fabrics made of chemical fibers coated with P.V.C. The attainable tensile strength of the sealed seam must approach that of the base material. (Author)

Kury, Charles.
METAL SPOOLS AND TUBES IN THE TEXTILE INDUSTRY. [1962] 4p. (figs. omitted).
Order from OTS or SLA $1.10 62-18560

Trans. of French patent 584,842, appl. 21 Aug 24, granted 28 Nov 24, issued 14 May 25.

DESCRIPTORS: *Textile industry, Fibers, *Machines, Industrial equipment, *Geometric forms, Metals.

Lübbert, Wolfgang.
BONDING OF CANVAS (Kleben von Planenstoffen). [1962] [16]p.
Order from SLA $1.60 63-15582

Trans. of Kunststoffe (West Germany) 1959, v. 49, no. 8, p. 432-434.

DESCRIPTORS: *Textiles, *Bonding, Adhesives, Moistureproofing, Mechanical properties, Fibers (Synthetic), Plastic coatings.

Synthetically coated canvas is bonded with elastic synthetic adhesives. Examples of suitable raw material bases are given of which acrylic rubber and polychlorene butadienes are most important. The adhesives obtained sometimes surpass the strength of the basic material. Numerical tables concerning tensile strength of bondings with respect to temperature as well as data concerning comparable water vapor resistance of unbonded and bonded films and canvas are given. (Author)

Reindl, E.
QUALITATIVE AND QUANTITATIVE DETERMINATION OF SYNTHETIC FIBERS. Oct 61 [8]p. 3 refs.
Order from SLA $1.10 62-20124

Trans. of Melliand Textilberichte (West Germany) 1961, v. 42, no. 7, p. 758-760.

DESCRIPTORS: *Fibers (Synthetic), Physical properties *Chemical analysis, Microstructure, Dacron, Orlon, Nylon, Textiles, Fiber optics, Absorption (Physical) Synthetic fibers.

In view of the fact that there is almost no difference in the longitudinal appearance and the cross-section of synthetic fibers, the varying behavior of these fibers towards chemicals was used as a basis for the development of methods for the qualitative and quantitative identification of these fibers. These include microscopic recognition, determination of the melting point/heat resistance, chemical determination methods/solvents. (Author)

Schwaebel, Richard.
FLOCKING AND FLOCKING METHODS. [1962] 13p.
Order from SLA $1.60 63-15584

Trans. of Zeitschrift für die Gesamte Textil-Industrie (West Germany) 1961, v. 63, no. 11, p. 934-938.

DESCRIPTORS: *Textiles, *Fibers, Processing, Manufacturing methods, Adhesives.

Weckler, G.
PIGMENT DYESTUFFS IN THE TEXTILE INDUSTRY. [1962] [25]p. 9 refs.
Order from SLA $2.60 62-20022

Trans. of Melliand Textilberichte (West Germany) 1960, v. 41, no. 5, p. 573-576 and no. 6, p. 733-736.

DESCRIPTORS: *Textile industry, *Dyes, *Pigments, Chemical bonds, Binders, Stability, Textiles, Printing, Colors.

Williams, Albert George.
STRONG SYNTHETIC FILAMENTS. [1962] 7p.
Order from OTS or SLA $1.10 62-20008

Trans. of Belgian patent 606,313, filed 19 July 61 (Priority: U.S. no. 44,543, 22 July 60 and no. 92,738, 2 Mar 61) by Celanese Corporation of America.

DESCRIPTORS: *Threads, *Fibers (Synthetic), *Textiles, Mechanical properties, Industrial production.

Paints and Finishes

ZINC DUST PAINTS FOR MARINE USE. 27 Feb 63.
Order from TTIS $9.00 TTIS-2438

Trans. of Belgian patent 616,636, by Bergolin Lack- u Farbenfabriken, appl. 19 Apr 62.

DESCRIPTORS: *Zinc compounds, *Pigments, *Paints, Marine engineering.

Hartmann, J.
TESTING THE CURING OF STOVING FINISHES BY MEANS OF CURRY POWDER. 27 Feb 63, 15 words.
Order from TTIS $15.00 TTIS-2443

Trans. of Farbe u[nd] Lack (West Germany) 1962 v. 68 [no. 9] p. 595-598.

DESCRIPTORS: Test methods, Aging (Materials), *Finishes, Powders, *Heaters.

Kraus, A.
THE BEHAVIOUR OF ALKYD RESINS IN CELLULOSE LACQUERS. 27 Feb 63.
Order from TTIS $9.00 TTIS-2437

Trans. of Farbe u[nd] Lack (West Germany) 1962, v. 68, p. 847-848.

DESCRIPTORS: Behavior, *Alkyd resins, *Cellulose, *Varnishes.

Wache, M.
COATING METALLIC PARTS WITH THICK EPOXY-BITUMEN MATERIALS. 27 Feb 63.
Order from TTIS $21.00 TTIS-1090

Trans. of French patent 1,293,072, appl. 28 Mar 61, pub. 17 Oct 62.

DESCRIPTORS: *Metal coatings, *Epoxides, *Protective treatments, *Bitumens, Thickness.

Photographic Materials

THE PROCEDURE WHICH PERMITS TO ACHIEVE PHOTOGRAPHIC CONTRASTS BY MEANS OF A DIAZO COMPOUND. [1955] 3p.
Order from OTS or SLA $1.10 62-16376

Trans. of French patent 863,089, gr. 17, cl. 3, by N. V. Philips' Gloeilampenfabrieken (Netherlands) appl. 26 Jan 40, issued 23 Dec 40, pub. 22 Mar 41 (appl. filed: Germany, 27 Jan 39, declaration of applicant).

DESCRIPTORS: *Photographic images, *Azo compounds, Photography, *Photographic chemicals, *Photographic emulsions, Sensitivity.

Abritalin, V.
PHENIDONE DEVELOPERS. [1962] 8p.
Order from OTS or SLA $1.10 62-18676

Trans. of Sovetskoe Foto (USSR) 1961 [v. 21] no. 12, p. 26-27.

DESCRIPTORS: *Photographic chemicals, Phenyl radicals, *Pyrazoles, *Quinones, Photographic film, Processing.

Boldebuck, Edith Maude.
NEW THERMOPLASTIC COMPOSITIONS. [1962] 14p. (tables omitted).
Order from OTS or SLA $1.60 62-18514

Trans. of French patent 1, 281, 034, appl. no. 852, 769, 15 Feb 61, granted 27 Nov 61, U. S. appl. no. 8, 587, 15 Feb 60 (pub. in Bulletin Officiel de la Propriete Industrielle (France) 1962, no. 1).

DESCRIPTORS: *Photographic films, *Thermoplastics, *Silicone plastics, Methyl radicals, Phenyl radicals, Styrenes

Meiklyar, P. V.
THE RELATION BETWEEN PHOTOGRAPHIC SENSITIVITY AND THE PHOTOEFFECT. [1962] 3p. 6 refs.
Order from OTS or SLA $1.10 62-18678

Trans. of mono. Kratkie Soobshchenia [sic] 1961, p. 452-453.

DESCRIPTORS: *Photosensitivity, *Absorption spectrum, *Photographic emulsions, Silver, Halides, Colloids, Crystals, *Photoelectric effect.

Solov'eva, I. A., Levkoev, I. I., and Guseva, A. G.
STRUCTURE OF DYED COMPOUNDS FORMED DURING THE OXIDATION OF COLOR COUPLERS, PYRAZOLONE (5) DERIVATIVES, IN AIR OXYGEN. [1962] 18p. 13 refs.
Order from OTS or SLA $1.60 62-18698

Trans. of Vsesoyuznyi Nauchno-Issledovatel'skii Kinofotoinstitut. Trudy (USSR) 1960, no. 40, p. 95-105.

DESCRIPTORS: *Photographic chemicals, *Color film, *Dyes, *Pyrazolone derivatives, Oxidation, Air, Oxygen, Molecular structure.

The process of oxidation of 1-phenyl-3-methylpyrazolone by air in a weakly alkaline solution at raised temperatures, was investigated. Colorless 1-phenyl-3-methyl-4-hydroxypyrazolone, 1-phenyl-3-methyl-4-phenylazopyrazolone (orange crystals, with an absorption maximum at 395 mμ, as well as magenta and blue dyes (with absorption maxima at 535 and 580mμ, belonging to polymethine oxanine class, were separated from the oxidation products. It was shown that a mixture of yellow and purple dyes was formed when a single-layer color film containing 1-/4'-phenoxy-3-sulfophenyl/-3 heptadecylpyrazolone, was developed in the dark and kept at a high temperature and high relative humidity. Obviously the indicated mixture contained 4-arylazopyrazolone and a magenta dye, which is pyrazolonotrimethinoxanine. The red or yellowish-brown coloring which appears in multilayer color films during storage is obviously related to the formation of the dyes described above. (Author)

Yamaguchi, T., Takahashi, K. and others.
STATIC ELECTRIFICATION OF ELECTROPHOTOGRAPHIC LAYERS. [1962] 6p.
Order from ATS $10.80 ATS-53N57J

Trans. of Denshi Shashin (Japan) 1961, v. 3, no. 1, p. 12-15.

DESCRIPTORS: *Electrophotography, Photography, Electrostatics.

Plastics

MANUFACTURING GLASS TEXTOLITE PRODUCTS AND A TABLE OF EQUIVALENT TERMS FOR CHEMISTRY AND PLASTICS. 21 Mar 63 [19]p. JPRS: 18271.
Order from OTS $0.50 63-21382

Trans. of Plasticheskie Massy (USSR) 1963, no. 1, p. 74-75 and 78-80.

DESCRIPTORS: Manufacturing methods, *Glass textiles, *Stresses, Asbestos, Tensile properties, Tests, Indexes, *Chemistry, *Plastics, USSR, France, English language, *Vocabulary.

Contents:
Study of internal stresses arising in the production of products from glass textolite material, by I. A. Kozlov and I. V. Lebedev
Equivalent terms (proposed) in three languages, by Technical Committee 61 (plastics) of ISO for use in the field of chemistry and the technology of plastics.

Frey, H. E.
THE EFFECT OF FINISH COATINGS ON THE PLASTICIZER MIGRATION IN PVC ARTIFICIAL LEATHER. [1962] 24p.
Order from K-H $30.00 K-H 5309

Trans. of Kunststoffe (West Germany) 1956, v. 46, no. 2, p. 81-86.

DESCRIPTORS: *Coatings, *Plasticizers, *Artificial leather, *Polyvinyl chloride

Furukawa, Junju, Tsuruta, Teiji and others.
POLYMERIZATION OF VINYL CHLORIDE CATALYZED BY METAL ORGANIC COMPOUNDS. [1962] 23p.
Order from K-H $28.75 K-H 11796 a

Trans. of Kogyo Kagaku Zasshi (Japan) 1958, v. 61, no. 10, p. 1362-1366.

DESCRIPTORS: *Polymerization, Vinyl chlorides, *Catalysis, *Metalorganic compounds, *Polyvinyl chloride.

Giannini, U. and Gesca, S.
VINYL CHLORIDE POLYMERS OBTAINED WITH CATALYSTS PREPARED FROM ALUMINUM ALKYLS AND VANADIUM COMPOUNDS, tr. by Fischer. [1962] 24p.
Order from K-H $30.00 K-H-12245b

Trans. of la Chimica e l'industria (Italy) 1962, v. 44, no. 4, p. 371-378.
Other translations are available from CTS(Chem) $16.40 (subsequent copies $2.70/ea) as CTS(Chem)-288, Aug 62, 4100 words; and from SLA $2.60 as 62-18673 [1962] [26]p.

DESCRIPTORS: *Polyvinyl chloride, *Polymers, Catalysts, Aluminum compounds, Alkyl radicals, Vanadium compounds.

Grams, E. and Gaube, E.
THE NEW LOW-PRESSURE POLYETHYLENES, THEIR PROPERTIES AND FIELDS OF APPLICATION. [1962] 33p.
Order from K-H $41.25 K-H 3805

Trans. of Angewandte Chemie (West Germany) 1955, v. 67, no. 19/20, p. 548-556.
Other translations are available from SLA $1.60 as 62-10013 [1961] 18p.; $2.60 as 62-20064 [1962] [22]p. from ES $8.00 [1961] 21p.

DESCRIPTORS: *Polymers, *Ethylenes, Polyethylene plastics.

Gregor, F. and Pavlacka, E.
AN 'INTERNAL' EMULSIFIER FOR POLYVINYL ACETATE RESINS FOR SURFACE COATINGS. 27 Feb 63, 1200 words, 2 refs.
Order from TTIS $9.00 TTIS-7001

Trans. of Chemicky Prumysl (Czechoslovakia) 1962 v. 12[(37)] p. 689-691.

DESCRIPTORS: *Colloids, *Vinyl radicals, *Acetates, *Acetal plastics, Surfaces, *Coatings.

Guyot, A[lain] and Benevise, J[ean]-P[aul].
THE THERMAL DEGRADATION OF POLYVINYL CHLORIDE, I. KINETIC STUDIES (Degradation Thermique du Chlorure de Polyvinyle, I). [1962] [10]p. 19 refs.
Order from SLA $1.10 62-18429

Trans. of J[ournal of] Applied Polymer Science (U. S.) 1962, v. 6 [no. 19] p. 98-102.

DESCRIPTORS: *Heat, *Degradation, *Polyvinyl chloride, Dynamics, Separation, Hydrochloric acid, Electrodes, Reaction kinetics, Pyrolysis.

An apparatus for polyvinyl chloride thermal degradation under isothermal conditions and in a controlled atmosphere is described with precision. Continuous measurement of loss of weight of the sample under degradation and, at the same time, continuous titration of hydrochloric acid evolved, can be carried out. The apparatus consists essentially of a magnetically equilibrated Ugine-Eyraud balance in which runs a purified gas stream that picks up volatile products in an argentimetric titration cell, coupled to a titrimeter and recorder. Total precision of simultaneous measurements is 1%. An example of the experimental results is given.

Guyot, Alain; Benevise, Jean-Paul; and Trambouze, Yves.
THE THERMAL DEGRADATION OF POLYVINYL CHLORIDE. II. KINETIC STUDIES IN INERT ATMOSPHERE (Sur le Degradation Thermique du Chlorure de Polyvinyle. II. Etudes Cinetiques sous Atmosphere Inerte). [1962] [15]p. 24 refs.
Order from SLA $1.60 62-18428

Trans. of Journal of Applied Polymer Science (U. S.) 1962, v. 6, no. 19, p. 103-110.

DESCRIPTORS: *Heat, *Degradation, *Polyvinyl chloride, Dynamics, *Controlled atmospheres, Nitrogen, Absorption spectrum, Reaction kinetics, Pyrolysis, Hydrochloric acid.

(See also 62-18429)

Kalinsky, D.
EPOXIDISED SOAY BEAN OIL AS A P. V. C. PLASTICISER. 27 Feb 63.
Order from TTIS $18.00 TTIS-6001

Trans. f Polimery [Teorzywa Wielkoczasteczkowe] (Poland) 1962, v. 7, p. 245-248.

DESCRIPTORS: *Epoxides, *Soybean oil, *Polyvinyl chloride, *Plasticizers

Suzumura, H., Hirano, K., and Chiba, T.
PREPARATION OF A POLYVINYL DERIVATIVE SOLUBLE IN WATER. [1962] 4p.
Order from ATS $8.00 ATS-72P66J

Trans. of Japanese patent 17,693, by Kurashiki Rayon Co., Ltd., pub. 29 Oct 62, appl. filed 9 Dec 60, appl. 48,062 (1960).

DESCRIPTORS: *Vinyl radicals, *Polymers, Preparation, Solubility, Water, *Vinyl plastics.

St. Clair, William Edward.
METHOD FOR THE PREPARATION OF MONOMERIC AND POLYMERIC GLYCIDYL ETHERS. [1962] 5p. 3 refs.
Order from OTS or SLA $1.10 62-18516

Trans. of German patent 1,128,667, K 31099 IV d/39 c, cl. 39 c 30, internat. cl. C 08 g, appl. 12 Feb 57, pub. 26 Apr 62, by Koppers Co., Inc.

DESCRIPTORS: *Glycidyl ethers, Preparation, Phenols, Acetyl plastics, Halohydrins, Hydroxides

A method for the preparation of monomeric and polymeric glycidyl ethers by the reaction of phenolic compounds with epihalohydrin in an alkaline medium is described. The method is characterized in that a uni- or multivalent phenol or a novolak is dissolved in an excess amount of epihalohydrin needed for etherification, and that the components of the solution are converted after being heated to at least 60°C, but below the decomposition temperature of epihalohydrin, during the addition of an alkali hydroxide that has been dissolved in a lower alcohol. Resorcin, hydroquinone, catechin or cresol are used as a phenol. A phenol-formaldehyde resin or a resorcin-formaldehyde resin are used as a novolak. Epichlorohydrin is used as the epihalohydrin. Sodium- or potassium hydroxide are used as the alkalihydroxide. (Author)

Vieweg, R.
PRESENT SITUATION IN THE FIELD OF PLASTICS. [1962] 7p.
Order from SLA $1.10 63-10007

Trans. of V[erein] D[eutscher] I[ngenieure]. Zeits-[chrift] (West Germany) 1948, v. 90 [no. 11] p. 331-334.

DESCRIPTORS: *Plastics, Silicone plastics, Fluorine, Halocarbon plastics, Processing, Plastic industry.

Rubber and Elastomers

A NEW KING OF AGE RESISTER DK 66, 094, 382. [1962] 2p.
Order from K-H $2.50 K-H 12351 b

Trans. of Chemiker Zeit[ung] (West Germany) 1960, v. 84, no. 11, p. 365-366.

DESCRIPTORS: *Antioxidants, *Vulcanizates, Aging, Countermeasures, Rubber

Kunowski, H. and Hofmann, U.
COMPARATIVE INVESTIGATION OF FILLERS FOR RUBBER COMPOSITIONS. [1962] [43]p. 49 refs.
Order from SLA $4.60 62-20060

Trans. of Angew[andte] Chem[ie] (West Germany) 1955, v. 67, p. 289-300.

DESCRIPTORS: *Rubber, Vulcanizates, *Additives, Adsorption, Phenols, Carbon black, Tests.

A total of 60 different filler materials was investigated for the purpose of determining relationships between the physical and chemical properties and the technological behavior of the corresponding filled vulcanizates of Buna-S and natural rubber. It was found that with heavily loaded vulcanizates the values for softness, Shore-hardness, and for the most part, impact elasticity were primarily dependent upon the magnitude of the specific surface or the particle size of the filler materials. The dispersability of the fillers in the vulcanizate also played an important part. The particle shape and the chemical nature of the fillers and the rubber are less significant. A special method for measuring the specific surface of hydrophilic fillers based on their phenol adsorptiveness has been developed. (Author)

Wood and Paper

THE CHAPELLE PAPER COMPANY: WORK WITH A NEW TYPE OF CHIP FOR THE PRODUCTION OF THEIR CHEMICAL PULP. [1962] [11]p.
Order from SLA $1.60 62-20218

Trans. of Papeterie (France) 1962, v. 84, no. 1, p. 26-29.

DESCRIPTORS: *Paper industry, *Wood pulp, Wood pulp machines, Paper, Industrial production.

[Durandeaux, Jan].
METHOD FOR THE PRODUCTION OF PAPER ENVELOPE FOR TOBACCO PRODUCT. [1962] 6p.
Order from K-H $7.25 K-H 11033a

Trans. of German patent 1,049,694 [D 21516 Iva/55f, cl. 55 f 16, Internat. cl. D21b, appl. 19 Oct 55, pub. announced 29 Jan 59 (Priority claimed: France, 27 Oct 54 and 10 Oct 55].
Another trans. is available from OTS or SLA $1.10 as 61-20015 [1961] 6p.

DESCRIPTORS: *Tobacco, *Cigarettes, *Packaging, *Paper, Smokes, Metal coatings, Platinum compounds, Palladium compounds.

For abstract see Technical Translations 6: 902, 1961.

Enkvist, T.
WHAT SHALL WE MAKE FROM LIGNIN? [1962] 10p.
Order from SLA $1.10 62-18617

Trans. of Tekniskt Forum (Finland) 1961, no. 20, p. 543-546.

DESCRIPTORS: *Lignin, Chemical industry, Wood, Wood pulp, Biochemistry.

Jayme, Georg and Felgel, Dietrich.
ELECTRONOPTIC PHOTOGRAPHS OF THE SURFACES OF SEMIPULPS FROM CONIFER-WOODS. [1962] 10p. (figs. tables omitted) 11 refs.
Order from SLA $1.10 62-20469

Trans. of das Papier (West Germany) 1962, v. 16, no. 4, p. 125-130.

DESCRIPTORS: *Wood, *Wood pulp, Surfaces, Electron microscopy, *Wood pulp fibers, Photographic analysis.

Maillet, Edgard.
MECHANICAL PROCESSING OF SECOND-GROWTH HARDWOOD IN THE FOREST FOR THE MANUFACTURE OF PAPER PULP. [1962] 16p.
Order from SLA $1.60 62-20102

Trans. of Papeterie (France) 1962, v. 84, no. 2, p. 128-133.

DESCRIPTORS: *Wood pulp machines, Trees, *Wood pulp, Processing, *Paper, Manufacturing methods.

Martin, G.
DIELECTRIC PROPERTIES OF PAPERS FOR CAPACITORS. [1962] 13p. (figs. formulae refs. omitted).
Order from SLA $1.60 62-20267

Trans. of Electricité (France) 1955 [v. 39] Mar, p. 59-65.

DESCRIPTORS: *Paper, Dielectric properties, Capacitors, *Paper capacitors.

Myslinska, Z. and Palenik, K.
MODERN METHODS OF PREPARING ROSIN SIZE. [1962] 11p. (figs. omitted) 9 refs.
Order from SLA $1.60 63-10062

Trans. of Przeglad Papierniczy (Poland) 1954 [v. 10] p. 328-332 and 341.

DESCRIPTORS: Paper industry, *Resins, *Sizing, Manufacturing methods.

Nilsson, O. and Stockman, L.
TWO-STAGE SULPHITE COOKING WITH MAGNESIUM BASE. [1962] 9p. 6 refs.
Order from SLA $1.10 63-10061

Trans. of Svensk Pappers-tidning, 1962 [v. 65] no. 18, p. 711-713.

DESCRIPTORS: *Wood pulp, *Magnesium compounds, *Sulfites, Processing, Paper.

Two stage magnesium sulphite cooking with an alkaline first stage and an acid second stage gave higher yields than a one stage conventional acid sulphite cooks. With saturated solutions in the first stage, highest yield increase was obtained at pH 9, and was found in this investigation to be 3.6%. By adding sulphite spent liquor a saturated solution containing 2 to 3 times as much magnesium sulphite is obtained and probably a higher yield increase could be reached. Using a magnesium sulphite slurry corresponding to 0.8% combined SO_2 in the first stage; the yield increase was 6.2% which was the same as the maximum value obtained with two stage sodium base cooking. The solubility of magnesium bisulphite-sulphite was therefore sufficient to cause yield increases due to the stabilization of glucomannan. (Author)

Pfulg, P.
PROGRESS IN PAPER AND BOARD DRYING TECHNIQUE. [1962] 16p. (figs. omitted) 11 refs.
Order from SLA $1.60 62-20189

Trans. of Association Technique de l'Industrie Papetière. Bull[etin] (France) 1961, no. 6, p. 480-496.

DESCRIPTORS: *Paper, *Fiberboard, Driers (Apparatus).

The Author explains the relationship between factors affecting the output of drying sections and the quality of the products, and then reviews the process of dehydration from the forming table and smoothing presses up to conditioning. The influence of the structure of the sheet on apparent drying defects is compared with the effects actually due to drying on the final characteristics of paper and board. Many methods of conditioning, humidification, and obtaining uniform moisture content are considered and illustrated. (Author)

Steve, R.
ATTEMPT TO SYNTHETISE METHODS OF MEASURING THE WHITENESS OF PAPER. [1962] 15p. 13 refs.
Order from SLA $1.60 63-10757

Trans. of Association Technique de l'Industrie Papetière. Bulletin (France) 1961, no. 5, p. 331-338.

DESCRIPTORS: *Paper, Colors, *Colorimetry, Numerical analysis, Standards.

Take, Yuichiro; Suzuki, Yutaka and others.
STUDIES ON THICKNESS OF PAPER. PT. I: CHANGES OF THICKNESS IN SUPERPOSITION. PT II: RELATION BETWEEN 'h' AND Hmax OR SMOOTHNESS. June 61, 16p. (figs. omitted) 10 refs.
Order from SLA $1.60 62-20209

Trans. of [Kemi-pa Gikyo-shi] (Japan) 1960, v. 14, p. 731-740.

DESCRIPTORS: Tests, Thickness, *Paper, Measurement, Numerical analysis, Micrometers, Electrical properties, Surface properties, Electric insulation, Capacitors, Materials.

Virkola, Nils-Erik and Alm, Aarnio A.
APPROACHES TO THE POSSIBILITIES OF CONTROLLING THE QUALITY OF PAPER PULP. [1962] 19p. (figs. omitted) 34 refs.
Order from SLA $1.60 63-10150

Trans. of das Papier (West Germany) 1961, v. 15, no. 10A, p. 522-529.

DESCRIPTORS: *Wood pulp, *Paper industry, Quality control, Manufacturing methods.

MATHEMATICS

Brandt, Heinrich.
TABLE OF PERIODIC CONTINUED FRACTIONS (PREFACE AND EXPLANATIONS). [1962] [17]p. (foreign text included).
Order from SLA $1.60 62-16094

Trans. of mono. Tafel der Regelmässigen Kettenbrüche, Berlin, 1955, p. v-xi.

DESCRIPTORS: *Continued fractions.

Dorodnitsyn, A. A.
METHOD OF THE INTEGRAL RELATIONS FOR THE NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS. [1962] [31]p.
Order from OTS or SLA $3.60 62-25867

Trans. of an unidentified mono. issued by the Institute of Exact Mechanics and Computing Technique of the Academy of Sciences USSR, Moscow, 1958.

DESCRIPTORS: *Partial differential equations, Integration, *Integrals, *Numerical methods and procedures.

Kapitsa, S. P.
DEVICE FOR COMPUTATION OF THE POISSON INTEGRAL AND SOME OF ITS APPLICATIONS. [1962] [19]p. 17 refs. ACIC LD-48.
Order from OTS or SLA $1.60 62-25426

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1955, no. 4, p. 369-376.

DESCRIPTORS: *Integrals, *Potential theory, Design, Operation, *Integrators (Computers), Geophysics, Terrestrial magnetism.

Kil'kishev, G. and Ovsienko, V.
MATHEMATICAL METHODS FOR PROCESSING STATISTICAL DATA: BOOK REVIEW. Review of mono. Vyravnivanie i Vychislenie Ryadov Raspredelenii, by A. I. Yezhov [Moscow] 1961, 336p. 25 Mar 63 [9]p. JPRS: 18338.
Order from OTS $0.50 63-21416

Trans. of #Voprosy Ekonomiki (USSR) 1962, no. 12, p. 114-117.

DESCRIPTORS: *Statistical data, Processing, *Economics, *Applied mathematics.

Linnik, Yu. V.
LIMIT THEOREMS FOR SUMS OF INDEPENDENT VARIABLES TAKING INTO ACCOUNT LARGE DEVIATIONS. II. 2. NARROW ZONES OF LOCAL AND INTEGRAL NORMAL ATTRACTION. 14 Dec 62 [22]p. 16 refs. FTD-TT-62-1148.
Order from OTS or SLA $2.60 63-15327

Unedited rough draft trans. of #Teoriya Veroyatnostei i Ee Primeneniya (USSR) 1961, v. 6, no. 4, p. 377-391.

DESCRIPTORS: *Functions, *Integrals, Integration, Probability, Number theory.

Computing Devices

CYBERNETIC MACHINES: [SELECTED] ARTICLES. 27 Aug 62 [15]p. JPRS: 14962.
Order from OTS $0.50 62-11760, Rev.

Trans. from Leninskoe Znamya (USSR) 1962, July; Literaturnaya Gazeta (USSR) 1962, 7 July; Pravda, Moscow (USSR) 1962, 5 July.

DESCRIPTORS: *Cybernetics, *Digital computers, Learning, Computer logic, Design

Contents:
"Thinking" machines: friends or enemies, by V. Trapeznikov
Machine learns to learn, by G. Zelenko
Can a machine create a design, by Yu. Sinyakov

PROBLEMS IN BOOLEAN ALGEBRA AND IN USING TURING MACHINES. 20 Mar 63 [20]p. 5 refs. JPRS: 18244
Order from OTS $0.50 63-21370

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 148, no. 1, p. 47-53.

DESCRIPTORS: *Computer logic, *Algebras, *Operators (Mathematics), Algorithms, *Gates (Circuits), Models (Simulations), Matrix calculus.

Contents:
One class of turing machines, by N. V. Belyakin
Concerning gates, by E. I. Nechiporuk.

Beskrovnyi, I. M.
A REVERSIBLE DECIMAL COUNTER. 10 Jan 63 [5]p. FTD-TT-62-1438.
Order from OTS or SLA $1.10 63-15339

Unedited rough draft trans. of Russian patent 133684 (660467/26) 28 Mar 60.

DESCRIPTORS: *Pulse counters, Trigger circuits, Numbers, Coding, Gates (Circuits), Digital systems.

The reversible decimal counter is described, consisting of four flip-flops with a pair of output channels, one of which is opened by a " + " signal, and the other by a "-" signal, is distinguished by the fact that, in order to obtain reversing without additional feedback, the fourth flip-flop is connected to an additional pair of gates, and the collected outputs of the gates are connected to the 'one' inputs of the flip-flops of the second and third digits; the "one" input of the fourth digit is connected to the outputs of the channels of the third digit, and the "zero" input to the outputs of the channels of the first digit. (Author)

Chekalov, D. N., Matveeva, M. A. and others.
PHOTOELECTRIC DEVICE FOR ESTABLISHING IDENTICALNESS OF TEXT AND ILLUSTRATION ORIGINALS, FOR EXAMPLE, GEOGRAPHICAL MAPS AND REPRODUCTIONS OF THE LATTER. 11 Dec 62 [15]p. FTD-TT-62-1507.
Order from OTS or SLA $1.60 63-15334

Unedited rough draft trans. of Russian patent 141502 (660295/28) 28 Mar 60.

DESCRIPTORS: *Electronic scanners, Identification systems, *Photoelectric cells (Semiconductor), Semiconductor devices, Maps, Reproduction, Reading machines, Computer logic.

The proposed device is designed in the form of two photoelectric heads, a modulator of voltage, an electron amplifier of alternating current, a phase-sensitive circuit, an electron unit of comparison, and a system of light and sound signaling. This makes it possible to eliminate the laborous visual process and heightens the precision of the collation. (Author)

Danil'chenko, I. A.
A METHOD FOR GENERATING EQUIPROBABLE BINARY NUMBERS AND A DEVICE FOR ITS REALIZATION. 17 Jan 63, 5p. FTD-TT-62-1435.
Order from OTS or SLA $1.10 63-15548

Unedited rough draft trans. of Soviet patent 131141 (644100/26) 14 Nov 59.

DESCRIPTORS: *Pulse generators, Numbers, Probability, Digital systems, Trigger circuits, Pulse counters.

The method of generating equiprobable binary numbers is distinguished by the fact that, with the aim of increasing the formation rate and increasing the degree of stability of the probability near the required value, each number is formed by a determined pulse train over a random time interval. The device for accomplishing this method contains a static flip-flop, one of the inputs of which is connected to a sync-signal source, and the other to a random-pulse generator. (Author)

Novik, D. A.
A METHOD FOR REPRESENTING CODE VALUES OF OPTIMAL NONUNIFORM CODES ON THE MASKS OF CATHODE-RAY DECODING TUBES. 23 Jan 63, 5p. FTD-TT-61-461.
Order from OTS or SLA $1.10 63-15542

Unedited rough draft trans. of Soviet patent 136099 (670433/26) 20 June 60.

DESCRIPTORS: *Coding, *Cathode ray tubes, *Storage tubes, Computer storage devices, Trigger circuits.

The method of representing code values of optimal nonuniform codes on masks of cathode-ray decoder tubes is distinguished by the fact that with the aim of decreasing the required resolution of the masks, the numbers corresponding to the duration and order number are combined, and from the number obtained, by divi-

sion into approximately equal parts, horizontal and vertical coordinates of the code number are formed for recording on the mask of the tube. (Author)

Ofman, Yu.
ON THE ALGORITHMIC COMPLEXITY OF DISCRETE FUNCTIONS. [1962] [8]p.
Order from OTS or SLA $1.10 63-10333

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 145, no. 1, p. 48-51.
Another trans. is available from OTS or SLA $1.60 in 63-13267, JPRS-16303, 23 Nov 62 [19]p.

DESCRIPTORS: *Cybernetics, Theory, *Computers, Special functions (Mathematical), *Algorithms.

Zhozhakashvili, V. A.
DECODER OF A REMOTE CONTROL APPARATUS USING MAGNETIC ELEMENTS WITH RECTANGULAR HYSTERESIS LOOPS [Deshifratory Ustroistv Teleupravleniya na Magnitnykh Elementakh s Pryamougol'noi Petlei Gisterezisa]. [1961) 13p. MDF Z 104.
Order from OTS or SLA $1.60 62-23178

Trans. of Avtomatika i Telemekhanika (USSR) 1955, v. 16, no. 1, p. 87-95.
Another trans. is available from SLA as RT-3458.

DESCRIPTORS: *Remote control systems, Magnetic cores, Magnetic materials, Hysteresis, Coding.

Different methods are investigated of constructing contactless magnetic decoders and their deficiencies are explained. A method is proposed of constructing contactless decoders using magnetic elements with rectangular hysteresis loops. Symbolic decoder network notation is used similar to the notation of the primary networks of relay-contact decoders. Safety properties of the decoders developed are studied. (Author)

MECHANICS

Amiro, I. Ya.
STUDYING MAXIMUM LOAD FOR RIBBED CYCLINDRICAL SHELLS SUBJECTED TO SIMULTANEOUS EFFECT OF AXIAL FORCES AND INTERNAL PRESSURE [Doslidzhennya Granychnogo Nayantazhennya dlya Rebristikh Tsilindrichnikh Obolonok, Piddanikh Odnochasnii Dii Os'ovich Syl Ta Vnutrishn'ogo Tisku]. 4 Jan 63 [11]p. 5 refs. FTD-TT-62-1625.
Order from OTS or SLA $1.60 63-15580

Unedited rough draft trans. of Prykladna Mekhanika (USSR) 1961, v. 7, no. 5, p. 496-502.
Another trans. is available from OTS or SLA $1.60 as 63-15273, RTS-2167, Nov 62 [13]p.

DESCRIPTORS: *Cylindrical bodies, Elastic shells, *Structural shells, Load distribution, Pressure, Stresses, Mechanics.

The axial force, which at a given internal pressure leads to destruction of ribbed, closed cylindrical shells, can be designated on the basis of various premises. In this report are discussed two ways of establishing the approximate value of maximum load. (Author)

Bolotin, V. V.
STATISTICAL METHODS IN THE NONLINEAR THEORY OF ELASTIC SHELLS. [1962] [20]p. 9 refs.
Order from OTS or SLA $1.60 62-16026

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1958, no. 3, p. 33-41.

DESCRIPTORS: *Elastic shells, Theory, Stability, Load distribution, *Cylindrical bodies, Statistical analysis.

Feodos'ev, V. I.
ON THE STABILITY OF A SPHERICAL SHELL, SUBJECTED TO THE ACTION OF EXTERNAL HYDROSTATIC PRESSURE [Neustanovivsheesya Dvizhenie Vyazkoi Zhidosti Sozdavaemoe Vrashchayushchimsya Diskom] tr. by George Herrmann. Mar 56 [16]p. 7 refs. DTMB Trans-266.
Order from OTS or SLA $1.60 63-15671

Trans. of Prikladnaya Matem[atika] i Mekh[anika] (USSR) 1954, v. 18 [no. 1] p. 35-42.
Another trans. is available from OTS or SLA $1.10 as 62-23112, MDF F-104 [1961] 10p.

DESCRIPTORS: Elastic shells, Structural shells, Spheres, Stability, Pressure, *Hydrostatic pressure.

Gasser, Hans H.
BUCKLING OF A STRETCHED MULTI-PINNED BAR. [1962] 14p.
Order from SLA $1.60 62-18666

Trans. of Zeit[schrift] f[ür] Angew[andte] Math[ematik] u[nd] Phys[ik] (Switzerland) 1957, v. 8, no. 1, p. 64-71.

DESCRIPTORS: *Buckling, *Rods, Load distribution, Deformation, Mathematical analysis.

Lur'e, A. I.
CERTAIN PROBLEMS IN THE DYNAMICS OF A SYSTEM OF SOLID BODIES. 14 Jan 63 [22]p. 2 refs. FTD-TT-62-1152.
Order from OTS or SLA $2.60 63-15731

Unedited rough draft trans. of Politekhn[icheskii] In[stitut] Leningrad. Trudy (USSR) 1960, no. 210, p. 7-22.

DESCRIPTORS: *Solids, *Dynamics, *Inertia, *Gyro stabilizers, *Gyroscopes, Equations of motion, Tensor analysis, Vector analysis, Bodies of revolution, Rotation.

Ramshorn, R.
VERY SMALL PROBES FOR FLOW MEASUREMENT, tr. by R. Presser. 1961 [11]p. UKAEA DEG-Inf. Ser. 57 (CA).
Order from OTS or SLA $1.60 62-32400

Trans. of V[erein] D[eutscher] Ingenieure]. Zeitschrift (West Germany) 1959, v. 101, no. 20, p. 832-834.

DESCRIPTORS: *Gas flow, Turbulence, Velocity, Measurement, *Flowmeters, Design, Fluid mechanics.

Very small quadruple flow-measurement probes of 2 mm and 3 mm tube diameter were developed, which permit measurement of the magnitude and direction of air-flow velocity. These probes give local back-pressure and the components of flow direction in two perpendicular planes directly, in a given range - i.e. without necessary correction. (Author)

Aerodynamics and Pneumatics

Chushkin, P. I.
COMPUTATION OF SUBSONIC FLOW OF GAS PAST ARBITRARY PROFILES AND BODIES OF REVOLUTION (THE SYMMETRIC CASE). [1962] 18p. 6 refs.
Order from OTS or SLA $1.60 62-16391

Trans. of Vychislitel'naya Matematika (USSR) 1958, no. 3, p. 99-110.

DESCRIPTORS: Measurement, *Subsonic flow, *Numerical methods and procedures, *Gas flow, *Axially symmetric flow, *Bodies of revolution, Fluid dynamic properties.

In this paper we are concerned with the approximate computation of subsonic flow past a symmetric profile and body of revolution with zero angle of incidence of flow. Computations are carried out on the basis of a numerical method advanced by the member of academy A. A. Dorodnitsyn, a method that has already been used in connection with other two-dimensional nonlinear problems of gas dynamics. (Author)

Melkus, H.
ON THE SEPARATED V-STOSS. [1962] [37]p. (refs. omitted).
Order from SLA $3.60 62-18393

Trans. of [Ingenieur-Archiv] (Germany) 1951, v. 19, p. 208-227.

DESCRIPTORS: Supersonics, *Supersonic flow, *Aerodynamic configurations, Boundary layer transition, *Shock waves, Compressive properties, Separation, Velocity, Distribution, Compressible flow.

Mkhitaryan, A. M., Maksimov, V. S. and others.
EXPERIMENTAL INVESTIGATION OF THE FLOW IN THE INITIAL SECTION OF A SEMI-RESTRICTED, TURBULENT STREAM (Eksperimental'noe Issledovanie Techeniya v Nachal'nom Uchastkye Poluogranichennoi Turbulentnoi Strui) tr. by B. M. K. 1 Mar 63, 10p. 9 refs. I-8222.
Order from OTS $0.50 63-11584

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1961, no. 4, p. 111-119.

DESCRIPTORS: Experimental data, *Aerodynamics, *Turbulence, Turbulent boundary layer, Gas flow, Wind tunnels, Test equipment.

An experimental study of the flow of a semi-restricted, turbulent stream, flowing from a rectangular nozzle into a prismatic trough was made. At a length in excess of 10 bore diameters and at 70% of the trough width, there is a location which is a core of constant velocities. The boundary layer formed on the bottom of the trough is equivalent to the boundary layer occurring on a flat plate in the event an endless, or infinite, stream flows around it. A constant degree of turbulence within the core of constant velocities was shown. An empirical dependency describing the position of the upper limit of the constant velocity core as a function of nozzle size and flow velocity was obtained. (Author)

Zabrodskii, S. S.
THE COEFFICIENT OF RESISTANCE OF A SOLID PARTICLE IN A GAS FLOW (Ab Kaefitsentse Supratšiilennya Tsverdai Chastachki u Gazavym Patoku). Dec 61 [12]p. 14 refs. TIL/T.5196; [DSIR NLL] M.4793.
Order from OTS or SLA $1.60 63-13732

Trans. of A[kademiya] N[avuk] BSSR [Minsk]. Vest[si]. Ser[yya] Fiz[ika]-Tekh[nichnykh] Navuk, 1956, no. 4, p. 39-50.

DESCRIPTORS: *Gas flow, Solids, Particles, *Spheres, Bodies of revolution, *Aerodynamics, Drag, Turbulent boundary layer, Velocity.

The paper gives a critical analysis of data relating to the coefficient of resistance of spherical and irregular particles in a suspended or semisuspended state. The paper examines the following questions: the effect of the relative roughness of the particle on the coefficient of resistance, the effect of restricted soaring, the variation of the coefficient of resistance of particles and the flow round groups or clusters of particles.

Hydrodynamics, Hydraulics, and Hydrostatics

Blagoveshchenskii, S. N.
THEORY OF SHIP MOTIONS, tr. by Theodor and Leonilla Strelkoff. 1962, 2v.
Order from Dover Publications, Inc., 920 Broadway, New York, 10, N. Y. $2.00/vol.

Trans. of mono. [Kachka Korablei, Moscow, 1954]

DESCRIPTORS: Theory, *Ships, *Motion

Gheorghitza, Stanislas I.
MECHANICS OF FLUIDS: ON THE MOVEMENT OF INCOMPRESSIBLE FLUIDS IN POROUS MEDIA. [1962] 4p.
Order from K-H $5.00 K-H 9123

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1958, v. 246, p. 2720-2722 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Fluid mechanics, Fluid flow, Porous materials, Motion.

Kaario, Toivo Juhani.
A METHOD FOR ELEVATING A VEHICLE FREE FROM THE SURFACE OF TRANSPORTATION. [1962].
Order from K-H $5.00 K-H 10819

Trans. of Finnish patent 26, 122, appl. 20/49 [granted 10 Dec 52, pub. 14 Nov 53].
Another trans. (claims only) is available from LC or SLA mi$1.80, ph$1.80 as 60-13273, 9 Dec 59, 1p.

DESCRIPTORS: Lift, *Hydrofoils.

For abstract see Technical Translations 3:600, 1960

Kuliev, I. P.
ON THE DESIGN OF OFFSHORE OIL-FIELD HYDRAULIC STRUCTURES OF OPEN CONSTRUCTION ON THE BASIS OF THE EFFECT OF SEA WAVES (O Raschete Morskikh Neftepromyslovykh Gidrotekhnicheskikh Sooruzhenii Skvoznoi Konstruktsii na Deistvie Morskikh Voln). [1962] [9]p. (foreign text included) 3 refs.
Order from OTS or SLA $1.10 62-16429

Trans. of Akademiya Nauk Azerbaidzhanskoi SSR [Baku]. Doklady, 1958, v. 14, no. 4, p. 287-290.

DESCRIPTORS: *Marine engineering, Design, Petroleum, Sources, *Hydraulic systems, *Structures, Water waves.

Supolkin, G. A.
ON HYDRAULIC RESISTANCE IN A TRANSITIONAL REGION. [1961] 3p. 2 refs.
Order from RIS $5.00 RIS E-740

Trans. of [Akademiya Nauk Tadzhikskoi SSR, Stalinabad]. Doklady, 1958, v. 1, no. 2, p. 23-25.

DESCRIPTORS: *Hydraulic systems, Pipes, Fluid flow, Resistance.

Yakovlevskii, O. V.
THE MIXING OF JETS IN A CHANNEL WITH VARIABLE CROSS-SECTION. 17 Jan 63, 15p. 7 refs.
FTD-TT-62-1571.
Order from OTS or SLA $1.60 63-15526

Unedited rough draft trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Mekhanika i Mashinostronenie, 1962, no. 1, p. 66-72.

DESCRIPTORS: Fluid flow, *Jet mixing flow, Turbulent flow, Velocity, Diffusers.

An attempt is made to devise a method of calculating the flow of a fluid with nonuniform velocity distribution of the jet type in a channel with variable cross-section. (Author)

METALLURGY

BRAZING AND WELDING SINTERED ALUMINUM POWDER. 18 Mar 63 [26]p. JPRS: 18187.
Order from OTS $0.75 63-21349

Trans. of #Svarochnoe Proizvodstvo (USSR) 1961, no. 11, p. 7-13.
A review trans. is available from OTS or SLA $1.10 as 62-15411, AID-61-166, 14 Dec 61, 3p.

DESCRIPTORS: *Brazing, *Welding, *Aluminum, *Powder alloys, Spot welding, Mechanical properties, Microstructure

Contents:
Spot and seam welding of SAP, by Yu. V. Dmitriev and others
On brazing SAP, by Yu. S. Dolgov and others

ELIMINATION OF POROSITY IN CASTINGS BY TREATMENT WITH INERT GASES. [1962] [4]p.
Order from SLA $1.10 62-20076

Trans. of Fonderia [Italiana] 1957, v. 6, p. 19-21.

DESCRIPTORS: *Castings, *Porosity, Helium group gases, Reduction, Quality control.

METAL POWDERS AND WELDING. 1 Apr 63 [19]p. 6 refs. JPRS: 18465.
Order from OTS $0.50 63-21465

Trans. of Svarochnoe Proizvodstvo (USSR) 1962, no. 11, p. 13-15; and #Avtomaticheskaya Svarka (USSR) 1962 [v. 15] no. 11, p. 71-76.

DESCRIPTORS: *Powder metals, *Welding, Iron, Iron alloys, Tungsten, Nickel, Tin, Lead, Titanium, Aluminum, *Electrodes, *Electroslag process, Steel.

Contents:
Certain problems on the welding of metal powders, by L. A. Mel'nikov
Powder-plate electrode for electroslag facing, by A. Ya. Shvartser and others.

MINING AND METALLURGY QUARTERLY, 1962, NO. 1. 1962, 37p. 13 refs. PL-480 Int.
Order from OTS $0.50 62-19467-1

Trans. of Rudarsko-Metalurski Zbornik (Yugoslavia) 1962, no. 1.

DESCRIPTORS: *Mining engineering, *Metallurgy, Yugoslavia, Production, *Nickel, *Oxides, *Silicates, Iron compounds, Ores, Reduction, Ammonia, Sulfuric acid, Water, Pyrites, Exploration, Economic geology, Geochemistry, Barium compounds, Sulfates, Magnetic separation.

Contents:
Hydrometallurgical production of nickel from nickel-bearing oxide-silicate iron ores, by K. Cazafura and others
The barite occurrences around the Jerma colliery in eastern Serbia, by M. Jeremic
The enrichment possibilities of Fe-Ni ores from the regions of Mokra Gora and Vardiste, by D. Ocepek and N. Cerk.

SOVIET POWDER METALLURGY: [SELECTED] ARTICLES. 28 Mar 63 [29]p. 8 refs. JPRS: 18407.
Order from OTS $0.50 63-21442

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 136, no. 2, p. 332-335; Akademiya Nauk SSSR. [Otdelenie Khimicheskikh Nauk]. Izvestiya. 1962, no. 9, p. 1690-1692; Izvestiya Vysshikh Uchebnykh Zavedenii. Tsvetnaya Metallurgiya (USSR) 1962 [v. 5] no. 3, p. 129-134; ##Izvestiya Vysshikh Uchebnykh Zavedenii. Chernaya Metallurgiya (USSR) 1962, no. 2, p. 101-103; #Vestnik Mashinostroeniya (USSR) 1959 [v. 39] no. 5, p. 53-56.
##Another trans. is available from HB $2.70 as HB-5650, June 62, 900 words.

DESCRIPTORS: *Powder metallurgy, Hydrostatic pressure, *Metals, *Oxides, Radiochemistry, *Titanium compounds, *Zirconium compounds, *Nitrides, Cobalt, Nickel, *Powder metals, Fracture (mechanics), Dies, Metal forming presses.

Contents:
Some aspects of the hydrostatic pressing of powders, by M. Yu. Bal'shin and A. P. Dubrovskii
A radiation method of preparing finely divided metals and oxides, by G. M. Zhabrova and others
Wetting and impregnation of briquettes of titanium and zirconium nitrides by molten cobalt and nickel, by L. V. Beilina and others
##Causes of lamination cracks in pressings made of metal powders, by A. N. Nikolaev
Pressing of metal powders, by S. Ya. Plotkin and G. V. Samsonov.

WORKS ON HEAT-RESISTING MATERIALS, SEMINAR, KIEV, 13-17 June 58. 4 Feb 63 [147]p. 80 refs. JPRS: 17446.
Order from OTS $2.75 63-21045

Trans. of Akademiya Nauk URSR, Kiev. Instytut Metalokeramiky i Spetsial'nykh Splaviv. Byulleten', 1960, no. 5, p. 1-65.

DESCRIPTORS: *Heat resistant materials, *Metalloids, *Borides, *Carbides, *Nitrides, *Silicides, *Transition elements, Niobium, Niobium compounds, Chromium, *Chromium compounds, Absorption spectra, Brittleness, *Diffusion, Rare earth elements, Rare earth compounds, Crystal structure, Physical properties, Powder metallurgy, Ceramic materials, X-rays, Boron compounds, Scattering.

Contents:
Foreword
Preface
Physical properties of metalloid compounds, by V. S. Neshpor
The $L_{\beta 2}$ and $L_{\gamma 1}$ emission bands of Columbium in CbN, CbC and CbB_2, by M. I. Koreunskii and Ya. E. Genkin
K-absorption spectra of chromium in borides, carbides, nitrides and some other compounds, by S. A. Nemnonov and A. Z. Men'shikov
Comparative brittleness of heat-resistant compounds, by I. N. Frantsevich and A. N. Pilyankevich
Codiffusion of two elements into hard metal, by V. I. Arkharov and V. N. Konev
Structure and properties of rare-earth metal borides, by G. V. Samsonov and N. N. Zhuravlev
Precision determining of the lattice periods of boron carbides of $B_{2.75}$ to $B_{6.75}$ composition by means of roentgenograms obtained within the range of large angles of scattering ($\theta \rightarrow 90^{\circ}$) by V. I. Kudryavtsev and G. V. Sofronov.

Abramov, G. A.
WAYS OF DEVELOPMENT OF CELLS AND ELECTROLYTIC ALUMINUM PLANTS DURING THIRD FIVE-YEAR PLAN PERIOD [O Putyakh Razvitiya Elektrolizerov i Elektroliznykh Alyuminievykh Zavodov v Tret'em Pyatiletii]. [1962] 30p.
Order from K-H $37.50 K-H 3322a

Trans. of Legkie Metally (USSR) 1938 [v. 7] no. 2, p. 4-11.
Another trans. is available from SLA as RT-1602.

DESCRIPTORS: *Industrial production, Design, *Electrolytic cells, *Aluminum, Electrolytes, *Industrial plants.

Adrianova, V. P. and others.
RESULTS OBTAINED WITH THE USE OF NATURAL GAS IN THE OPEN-HEARTH FURNACE. Dec 62, 3400 words.
Order from HB $9.60 HB-5604

Trans. of mono. Stal': Sbornik Statei [Moscow] 1961, p. 70-80.

DESCRIPTORS: *Natural gas, *Fuels, Compressed air, Fuel oil, Design, Data, Costs, Steel, *Open hearth furnace.

Aketa, Y. and Ushijima, K.
ON THE HOMOGENEITY OF COMPOSITION AND STRUCTURE OF CONTINUOUS CAST BILLET MATERIALS. REPT. 8 of [Study of the Continuous Casting of Steel]. Feb 63, 2300 words.
Order from HB $8.80 HB-5670

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 8, p. 933-940.

DESCRIPTORS: Structural properties, *Casting alloys, Rods, *Materials, Mechanical properties, Chemical analysis.

Alov, A. A. and Nikiforov, G. D.
AUTOMATIC ARC WELDING OF ALUMINUM ALLOYS. [1962] [6]p.
Order from OTS - SLA $1.10 62-20157

Trans. of Vestnik Mashinostroeniya (USSR) 1954 [v. 34] no. 3, p. 60-63.

DESCRIPTORS: *Aluminum alloys, *Arc welding, Automatic, Spot welding, Welding fluxes.

Auzhbikovich, A. E.
SPECIFIC HEAT OF SOME SUBSTANCES USED IN THE MAGNESIUM BATH. [1962] 11p.
Order from K-H $13.75 K-H 5866a

Trans. of Legkie Metally (USSR) 1936, v. 5, no. 7, p. 52-55.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 60-18534 [1960] [8]p.

DESCRIPTORS: Specific heat, *Materials, *Magnesium.

Bogdanov, O. S., Zakhavatkin, V. K. and others.
CONDITIONS AND PROSPECTS OF DEVELOPMENT OF THE TECHNIQUE OF BENEFICIATION OF IRON ORES AND SINTERING OF CONCENTRATES. [1962]
Order from BISI £10 BISI-3021

Trans. from [Vsesoyuznyi Nauchno-Issledovatel'skii i Proektnyi Institut Mekhanicheskoi Obrabotki Poleznykh Iskopaemykh. Trudy] (USSR) 1959, v. 122

DESCRIPTORS: *Iron, *Ores, *Sintering, Deposits, Automation, Industrial plants

Bol'shakov, L. I. and Zhilo, N. L.
THE INFLUENCE OF BARIUM OXIDE ON THE VISCOSITY OF BLAST FURNACE SLAGS. Mar 63.
Order from BISI £3 BISI-3188

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Chernaya Metallurgiya (USSR) 1962. no. 5, p. 44-50.

DESCRIPTORS: *Barium compounds, Oxides, Viscosity, *Blast furnaces, *Slags.

Cupr, V. and Pelikan, J. B.
THE EVALUATION OF THE ALKALIMETRIC TITRATION OF PHOSPHATING SOLUTIONS AND PHOSPHATING BATHS. Feb 63.
Order from BISI £1 5s BISI-2988

Trans. of Metalloberflache (West Germany) 1962, v. 16 [no. 6] p. 181-182.

DESCRIPTORS: Equations, *Titration, *Phosphate coatings, *Electroplating solutions.

Deutsch, V. and Schinke, H. -J.
NEW AIDS FOR THE ULTRASONIC TESTING OF WELDS. Feb 63, 1900 words.
Order from HB $5.70 HB-5603

Trans. of Schweissen und Schneiden (West Germany) 1962, v. 14, no. 3, p. 109-111.

DESCRIPTORS: *Welds, *Ultrasonic radiation, Test methods, *Non-destructive testing.

Eremenko, V. N., Ivashchenko, Yu. N., and Nizhenko, V. I.
MEASUREMENT OF SURFACE TENSION OF METALS AND ALLOYS BY THE METHOD OF THE RESTING DROP (Izmerenie Poverkhnostnogo Natyazheniya Metallov i Splavov Metodom Lezhashchei Kapli). [1962] [25]p. (foreign text included) 22 refs.
Order from OTS or SLA $2.60 62-18956

Trans. of Russian language article from unidentified source, n.d., p. 285-294.

DESCRIPTORS: Metals, *Alloys, *Surface tension, *Liquid metals, Measurement, Test methods, Grains (Metallurgy)

Measurements of the surface tension of tin were made in the temperature range of 251° to 882°. For the two series of measurements results were obtained that may be expressed by the respective equations:

$$\sigma = 542 - 0.065(t - 232^{\circ}) \pm 6 \quad \text{(I series)}$$

$$\sigma = 545 - 0.051(t - 232^{\circ}) \pm 2 \quad \text{(II ")}$$

The concentration relation was measured for the surface tension of alloys: tin-titanium up to 0.083 wt.% $_{Ti}$ at 300°. A high surface activity of titanium on tin was shown (addition of 0.083 wt.% of titanium lowers surface tension from 539 dynes/cm for tin to 155 dynes/cm for the alloy). The isotherm was constructed for adsorption of titanium on tin which passes through a maximum, as also in other cases of high surface activity. It was shown that small additions of titanium (0.01—0.-%) to tin favour a reduction in the grain size of the alloys recrystallising after deformation. (Author)

Ginzburg, E. S.
A METAL FOR STEAM TURBINES WITH HIGH AND SUPERCRITICAL STEAM PARAMETERS. 10 Jan 63 [25]p. 8 refs. FTD-TT-62-1273.
Order from OTS or SLA $2.60 63-15579

Unedited rough draft trans. of mono. Povyshenie Parametrov Para i Moshohnosti Agregatov v Teploenergetika: Sbornik Statei, Moscow, 1961, p. 112-121.

DESCRIPTORS: *Steam turbines, *Turbine parts, Metals, *Heat resistant alloys, *Steel, *Austenite, *Pearlite, Manganese alloys, Chromium alloys, Nickel alloys, Molybdenum alloys, Vanadium alloys, Tungsten alloys, Niobium alloys.

Grevtsev, N. V.
ARGON-ARC AND ELECTRON-RAY WELDING OF TANTALUM AND NIOBIUM. 10 Dec 62, 15p. 11 refs. FTD-TT-62-1244.
Order from OTS or SLA $1.60 63-15506

Unedited rough draft trans. of #Svarochnoe Proizvodstvo (USSR) 1962, no. 2, p. 8-12.

DESCRIPTORS: Welding, *Arc welding, *Argon, *Electron beams, *Tantalum, *Niobium, *Welded joints, Hardness, Grain structures (Metallurgy), Contamination, Gases, Oxygen, Nitrogen, Welding rods.

During the welding of tantalum and niobium with protective argon stream the metal of the seam and thermal effect zones are considerably saturated with oxygen and nitrogen which leads to sharp rise in hardness in all sections of the welded joint as compared with joints obtained by electron-beam welding. During argon-arc welding of tantalum better results with respect to arc burning stability as well as plasticity of joints, are attained in case of a nonconsumable tantalum electrode. Niobium should be welded with tungsten electrode. (Author)

Hasegawa, M. and others.
ADDITION OF RARE EARTH-CALCIUM-SILICON ALLOYS TO 18% Cr AND Cr-Mn STAINLESS STEELS. Feb 63, 1000 words.
Order from HB $3.50 HB-5874

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 11, p. 1485-1487.

DESCRIPTORS: *Rare earths, *Calcium alloys, *Silicon alloys, *Chromium alloys, *Manganese alloys, *Stainless steel, Structural properties.

Heynert, G.
IMPRESSIONS GAINED DURING A VISIT TO SOME BLAST-FURNACE PLANTS IN JAPAN. Feb 63, 2900 words.
Order from HB $7.25 HB-5794

Trans. of Stahl und Eisen (West Germany) 1962, v. 82, no. 24, p. 1720-1726.

DESCRIPTORS: *Blast furnaces, Industrial plants, *Japan.

Hosoi, Y.
EFFECT OF AUSFORMING ON IMPACT TOUGHNESS AND CREEP RUPTURE STRENGTH OF 13% Cr STEEL. Feb 63, 900 words.
Order from HB $3.40 HB-5875

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 11, p. 1487-1488.

DESCRIPTORS: Mechanical properties, Structural properties, *Chromium alloys, *Steel, *Stainless steel Austenite

Isaev, V. F. and Morozov, A. N.
THERMODYNAMIC CONDITIONS FOR THE FORMATION OF ALUMINUM NITRIDE IN LIQUID IRON. Feb 63, 1300 words.
Order from HB $3.80 HB-5828

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 11, p. 57-60.

DESCRIPTORS: *Iron, *Liquid metals, *Aluminum compounds, *Nitrides, *Thermodynamics.

Itaoka, T., Mizui, K. and others.
ANALYSIS OF METAL YIELD FROM A BASIC OXYGEN (LD) FURNACE. Feb 63, 1000 words.
Order from HB $4.40 HB-5629

Trans. of Tetsu to Hagane (Japan) 1961, v. 47, no. 10, p. 1362-1363.

DESCRIPTORS: Analysis, *Metals, Production, *Oxygen, *Furnaces, *Steel.

Itaoka, T. and others.
PRODUCTION OF API OIL-WELL CASING GRADE J-55 STEEL BY THE BASIC OXYGEN (LD) PROCESS. Feb 63, 900 words.
Order from HB $3.40 HB-5851

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 11, p. 1366-1368.

DESCRIPTORS: Production, *Oils, Well drilling, *Steel, *Oxygen, *Furnaces, *Pipes.

Itaoka, T., Fujii, R. and others.
PRODUCTION OF CONSTRUCTIONAL CARBON STEEL (NC-TYPE) BY THE BASIC OXYGEN (LD) PROCESS. Feb 63, 1000 words.
Order from HB $3.50 HB-5850

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 11, p. 1368-1371.

DESCRIPTORS: Production, Construction, *Carbon alloys, *Steel, *Oxygen, *Furnaces, Chemical analysis.

Kakutani, T., Matsukura, T., and Maruhashi, S.
ON THE DEOXIDATION PROCESS IN THE MELTING OF STAINLESS STEEL. Feb 63, 1400 words.
Order from HB $4.90 HB-5867

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 11, p. 1273-1274.

DESCRIPTORS: *Deoxidation, Melting, *Stainless steel, Chemical analysis.

Kolenko, V. A., Yutkin, L. A. and others.
INSTALLATION FOR REMOVING SINTER FROM THE SURFACE OF A STEEL HOT-ROLLED BAND WITH ABRASIVE MATERIAL. 29 Oct 62 [5]p.
FTD-TT-62-1291; AD-292 207.
Order from OTS or SLA $1.10 63-13918

Unedited rough draft trans. of [Soviet] patent 114646, appl nr. 591013/48a, 103, 28 Jan 58.

DESCRIPTORS: *Steel, *Surfaces, Sinters, *Cleaning, Abrasives.

Therme-electrolytic and hydro-electro-mechanical cleaning of sinter from metal tapes by means of electrical discharges, accomplished as a metallic bath with reflectors, located above the band to be cleaned and restricting its position in the bath, with rollers, which direct the band, and armature pipes, passing across the bath and protecting the high-voltage cable.

Koval'skii, L. S.
SCIENTIFIC-TECHNICAL CONFERENCE ON VACUUM DIFFUSION WELDING. 25 Mar 63 [5]p. JPRS: 18318.
Order from OTS $0.50 63-21402

Trans. of Svarochnoe Proizvodstvo (USSR) 1962, no. 9, p. 42-43.

DESCRIPTORS: *Conferences, *Vacuum apparatus, *Diffusion, *Welding, Metals, Alloys, Non-metals, Ceramic materials, Martensite, Austenite

The second scientific-technical conference on vacuum diffusion welding of metals, alloys, and non-metallic materials sponsored by the Oblast Boards of the Machinery Industry Scientific and Engineering Society and of the Moscow City Sovnarkhoz Scientific Research Laboratory for Vacuum Diffusion Welding was held in Moscow on 24-26 May 1962.

Koval'skii, L. S. and Stupak, L. M.
SCIENTIFIC-TECHNICAL CONFERENCE ON VACUUM DIFFUSION WELDING OF METALS, ALLOYS AND NON-METALLIC METALS (NO. 2) MOSCOW, MAY 62 [AND] ALL-UNION CONFERENCE ON ELECTROSLAG RESMELTING, KIEV, JUNE 62. 3 Jan 63 [9]p. JPRS: 16948.
Order from OTS or SLA $1.10 63-13675

Trans. of #Avtomaticheskaya Svarka (USSR) 1962 [v. 15] no. 9, p. 92-94.

DESCRIPTORS: *Conferences, *Electroslag process, Metals, Alloys, *Welding, Vacuum apparatus, Diffusion

Lepinskikh, B. M., Esin, O. A., and Manakov, A. I.
ELECTROLYTIC PRECIPITATION OF CHROMIUM AND VANADIUM FROM MOLTEN SLAGS. [1962] 6p. 3 refs.
Order from OTS or SLA $1.10 63-10144

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: Met[allurgiya] i Toplivo, 1961, no. 5, p. 19-21.

DESCRIPTORS: *Electrolysis, *Chemical precipitation, *Chromium, *Vanadium, *Slags, Impurities, Material separation, Reduction (Chemistry).

A study was made of the conditions of separate deposition of chromium and vanadium by electrolysis. It was found that at current densities lower than 1.1 amp/cm^2 vanadium is preferentially deposited on the cathode, while if the current density is greater than 1.1 amp/cm^2, chromium is deposited prefentially. The yield of vanadium extraction from industrial byproduct slags can be increased by the electrolytic process. (Author)

Leshchinskaya, E. I. and Rostovtsev, S. T.
MINERAL COMPOSITION OF FLUXED SINTER AND SOME SPECIAL FEATURES OF ITS REDUCTION, COMMUNICATION II. Jan 63, 4800 words.
Order from HB $11.60 HB-5662

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 5, p. 5-15.

DESCRIPTORS: *Sintering, Oxides, Silicon compounds, Calcium compounds, Iron compounds, Reduction.

Lifshits, E. V. and Mosova, L. N.
SPECTROGRAPHIC ANALYSIS OF PURE IRON. Feb 63, 500 words.
Order from HB $2.50 HB-5866

Trans. of #Zavodskaya Laboratoriya (USSR) 1962, v. 28, no. 11, p. 1329.

DESCRIPTORS: Spectroscopy, Analysis, *Iron

Mauch, H.
RAPID METHOD FOR DETERMINING THE COMPOSITION OF SOFT SOLDER ALLOYS. 30 Aug 55, 2p. (tables omitted) 1 ref.
Order from SLA $1.10 62-20290

Trans. of PTT Technische Mitteilungen (Switzerland) 1954, v. 32, 1 Sep, p. 362-363.

DESCRIPTORS: *Soldering alloys, Tin alloys, Lead alloys, *Balances, Weighing.

Mühlinghaus, A.
KUPALU COPPER-ALUMINUM WELDING METHOD. [1962] 3p. (figs. omitted).
Order from SLA $1.10 62-18421

Trans. of Aluminium (West Germany) 1953, v. 29 [no. 4] p. 164-165.

DESCRIPTORS: *Welding, *Copper, *Aluminum.

Okura, A. and Matsushita, Y.
ON THE RATE OF FLUID-BED REDUCTION OF IRON ORES. Feb 63, 1400 words.
Order from HB $4.40 HB-5865

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 11, p. 1237-1238.

DESCRIPTORS: Reduction, *Iron, *Ores, Equations, Chemical analysis, *Fluidized solids

Pachaly, E.
MELTING LOSS OF ALLOYING ELEMENTS WITH OXYGEN REFINING IN THE BASIC ELECTRIC ARC FURNACE. 8 May 53, 5p. (figs. tables omitted).
Order from SLA $1.10 62-18935

Trans. of Stahl u[nd] Eisen (West Germany) 1953, v. 73, n. 8, p. 461-469.

DESCRIPTORS: *Electric furnaces, Refineries, Oxygen, *Alloys, *Melting, *Chromium, *Recovery.

Pelzel, E.
MECHANICAL AND CASTING PROPERTIES OF HIGH QUALITY ZINC INJECTION MOULDING ALLOYS CONTAINING BERYLLIUM. 27 Feb 63.
Order from TTIS $36.00 TTIS NS 64

Trans. of Metall (West Germany) 1962, v. 16 [no. 11] p. 1120-1122.

DESCRIPTORS: Mechanical properties, *Castings, *Zinc alloys, *Beryllium, Injection, Quality control.

Seeman, H. J., Schmidt, G., and Stavenow, F.
INVESTIGATIONS ON QUANTITATIVE X-RAY FLUORESCENT ANALYSIS. [1962] [16]p. 4 refs.
Order from SLA $1.60 62-18708

Trans. of Z[eitschrift für] Naturforsch[ung] (West Germany) 1961, v. 16a [no. 1] p. 25-30.

DESCRIPTORS: *X-rays, *Fluorescence, Analysis, Excitation, Equations, Iron, Nickel, Alloys, Scintillation counters, Bremsstrahlung, Continuous spectrum, *Quantitative analysis.

The fluorescence intensity formed with excitation from a customary X-ray tube was calculated for a binary system and compared with experimentally determined values. It showed a very good agreement. Based on these results and under simplifying assumptions, a linear system of equations was formulated which permit a quantitative analysis of a multicomponent system with few standard determinations. It was found to be of advantage to conduct the investigation in dilute aqueous solutions. (Author)

Shavrin, S. V., Zakharov, I. N., and Ipatov, B. V.
FLOW OF SLAG (IN BLAST FURNACE) THROUGH (COKE) PACKINGS COUNTER CURRENT TO GAS. Feb 63, 4500 words.
Order frpm HB $13.50 HB-5795

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 9, p. 54-65.

DESCRIPTORS: *Blast furnaces, *Slags, *Coke, Gas flow, Velocity

Shteinberg, B. Sh. and Bogakovskii, N. A.
MULTIPLE RE-USE OF CHEMICAL NICKEL PLATING BATHS. Feb 63, 900 words.
Order from HB $3.40 HB-5887

Trans. of #Vestnik Mashinostroeniya (USSR) 1962, v. 42, no. 12, p. 65-66.

DESCRIPTORS: *Nickel coatings, *Nickel, Metal coatings, Electroplating solutions, Plating

Shtutman, M. N. and others.
SPECTROGRAPHIC ANALYSIS OF IRON ORE, SINTER, AND BLAST-FURNACE SLAG IN A 'RESONANT' D. C. ARC. Feb 63, 1300 words.
Order from HB $3.90 HB-5787

Trans. of #Zavodskaya Laboratoriya (USSR) 1962, v. 28, no. 11, p. 1330-1332.

DESCRIPTORS: *Spectroscopy, Analysis, *Iron, *Ores, *Sinters, *Blast furnaces, *Slags, Direct current

Suslov, V. N.
AUTOMATIC AND SEMI-AUTOMATIC WELDING OF CAST STEEL UNDER A CO_2 GAS SHIELD [Avtomaticheskaya i Poluavtomaticheskaya Svarka Litoi Stali pod Zashchitoi Uglekislogo Gaza]. [1962] [20]p. 2 refs.
Order from OTS or SLA $1.60 62-20046

Trans. of Svarochnoe Proizvodstvo (USSR) 1955, no. 1, p. 14-17.
Another trans. is available from HB as HB-3610.

DESCRIPTORS: *Steel, Castings, *Welding, Automatic, Shielding, *Carbon dioxide.

Takahashi, K., Onishi, T. and others.
BEHAVIOR OF SIGMA PHASE IN 25% Cr STAINLESS STEEL. Feb 63, 1000 words.
Order from HB $3.50 HB-5873

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 11, p. 1488-1490.

DESCRIPTORS: Iron alloys, *Chromium alloys, *Stainless steel, Structural properties, Steel

Tottori, T. and Ejima, M.
REMOVAL OF ARSENIC FROM LIQUID IRON BY VACUUM MELTING. Feb 63, 1400 words.
Order from HB $4.90 HB-5842

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 11, p. 1294-1295.

DESCRIPTORS: *Arsenic, *Iron, Vacuum apparatus, Melting, Liquid metals, Disposal

Valensi, G.
NEW APPLICATION OF THE THEORY OF OXIDATION OF METALS HAVING TWO OXIDES. [1962] 8p. (tables formulae [refs.] omitted).
Order from SLA $1.10 63-10026

Trans. of Revue de Metallurgie (France) 1948 [v. 45, no. 7] p. 205-210.

DESCRIPTORS: *Oxides, Metals, *Oxidation, Theory, Thermodynamics, *Metallic compounds.

Vertman, A. A. and Samarin, A. M.
PROPERTIES OF LIQUID ALLOYS IN SYSTEMS WITH UNLIMITED SOLIDUS SOLUBILITY (Svoistva Zhidkikh Splavov s Neogranichennoi Rastvorimost'yu Komponentov v Tverdom Sostoyanii). Oct 62 [11]p. 10 refs.
RTS 2156.
Order from OTS or SLA $1.60 63-15266

Trans. of Akad[emiya] Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: Met[allurgiya] i Toplivo, 1961, no. 2, p. 83-87.

DESCRIPTORS: *Liquids, *Alloys, Nickel alloys, Copper alloys, Cobalt alloys, Viscosity, Electrical conductance.

A study of melts in the Ni-Cu and Ni-Co systems is reported here.

Trillat, J. J.
ELECTRONIC RADIOGRAPHY AND ITS APPLICATION IN METALLURGY. [1962] 6p. (figs. [refs.] omitted).
Order from SLA $1.10 63-10014

Trans. of Revue de Métallurgie (France) 1949 [v. 46, no. 2] p. 79-83.

DESCRIPTORS: *Metallurgy, *Radiography, Photoelectrons, X-ray photography.

Wetternik, L.
NEW TRENDS IN PICKLING (COLLECTION OF THE METHODS DEVELOPED DURING RECENT YEARS). [1962] 6p.
Order from SLA $1.10 63-10039

Trans. of Berg- und Hüttenmannische Monatshefte (Austria) 1949 [v. 94, no. 2] p. 34-37.

DESCRIPTORS: *Pickling, Corrosion inhibition.

Wilsdorf, H.
ELECTRON MICROSCOPE INVESTIGATION OF METAL SURFACES WITH EVAPORATED SILICON MONOXIDE REPLICAS. [1962] 13p. (figs. [refs.] omitted).
Order from SLA $1.60 63-10036

Trans. of Zeitschrift für Metallkunde (West Germany) 1954, v. 45 [no. 1] p. 14-22.

DESCRIPTORS: Metals, *Surfaces, *Reproduction, *Electron microscopes, *Monoxides, *Silicon compounds, Evaporation.

The present article describes a method for the production of silicon oxide evaporated replicas. These replicas are easily produced and are characterized by considerable strength so that extensive fields of view are obtained and even rough metal surfaces can be reproduced. Resolution of the replicas was measured by photographing contours between dark- and light transitions and thus a resolution up to 36 Å was attained. On the basis of examples of application, details of the preparation technique for seven metals are discussed. The general applicability of the method is shown.

Zorin, O. D.
APPARATUS FOR THE SIMULTANEOUS SELECTION OF TEST SAMPLINGS OF GAS AND METAL FROM A STEEL FURNACE (Pribov dlya Odnovremennogo Otbora Pro Gaza i Metalla i Staleplavil'noi Pechi). [1962] [3]p.
Order from OTS or SLA $1.10 62-18144

Trans. of #Zavodskaya Laboratoriya (USSR) 1959, v. 25, no. 3, p. 375-376.

DESCRIPTORS: Steel industry, Furnaces, *Metals, *Gases, Sampling, Test equipment.

Ferrous Metals

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 99. 6 Mar 63 [28]p. JPRS: 17963.
Order from OTS $0.75 63-21254

Trans. of Referativnyi [Sbornik]. Ekonomika Promyshlennost i (USSR) 1962, no. 11, p. 109-110; Narodnoe Khozyaistvo Kazakhstana (USSR) 1962 [v. 20, no. 9] p. 14; and from Pravda, Moscow (USSR) 1962, 29 Nov, p. 2; Ekonomicheskaya Gazeta (USSR) 1962, no. 48(69) p. 42; no. 50(71) p. 31.

DESCRIPTORS: *Industrial production, *Metallurgy, Open hearth furnaces, Bessemer process, *Steel, *Conveyors, *Labor, *Ores (Metal sources), Phosphorus, Automation, Agriculture

Contents:
Prospects for quadrupling steel output by 1980 and advantages of Bessemer converter over open-hearth method, by M. N. Solntsev
Coordination of production and demand to reduce diversion of metal to chip, by N. Gorbasev
Automation of handling facilities at Machitogorsk metallurgical plant
Trained skilled personnel corrects deteriorated situation at Makeevka metallurgical plant
Production of steel from high-phosphoric ores to benefit industry and agriculture, by A. Myrtsimov

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 101. 8 Mar 63 [30]p. JPRS: 18031.
Order from OTS $0.75 63-21283

Trans. of Narodnoe Khozyaistvo Kazakhstana (USSR) 1962 [v. 20] no. 10, p. 28; Avtomaticheskaya Elektrosvarka (USSR) 1962, no. 9, p. 92-93; and from Ekonomicheskaya Gazeta (USSR) 1962, no. 51 [72] p. 16; Rabochaya Gaseta (USSR) 1962, 8 Dec, p. 2; 20 Dec, p. 2; 1963, 5 Jan.

DESCRIPTORS: *Industrial production, *Metallurgy, Smelting, *Steel, Machines, Electroslag process, Industrial plants, *Drilling machines, *Rolling mills, *Furnaces, *Steel industry, Handling, Mining engineering.

Contents:
The metal processing industry of Temir-Tau, by M. Akbiev
The electric slagging process of steel smelting, by L. M. Stupak
A gigantic metal working shop at the Zhdanov heavy machine building plant, by S. Ivanenko
New shops at the Koksokhimmash plant are making slow progress
For better utilization of mechanical equipment at the "Gigant" mine, by V. P. Zhulyanov
Dnepropetrovsk roll plant must be modernized, by N. Titarenko
Operations at the Severnaya mine are lagging, by V. Bagnit and Ya. Yakimov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 102. 15 Mar 63 [26]p. JPRS: 18146.
Order from OTS $0.75 63-21329

Trans. of #Zavodskaya Laboratoriya (USSR) 1962 [v. 28] no. 9, p. 1087-1088; Promyshlennaya Energetika (USSR) 1962 [v. 17] no. 11, p. 55-56; and from Pravda, Moscow (USSR) 1962, 7 Dec, p. 2; Kazakhstanskaya Pravda (USSR) 1962, 8 Dec, p. 1.

DESCRIPTORS: *Industrial production, *Metallurgy, *Ferromagnetic materials, Management engineering, Castings, *Steel, *Furnaces, Construction, Computers, Quality control, Evaporation, Cooling, Oxygen, Electric power production, Heat

Contents:
Problem of selecting magnetic characteristics in testing ferromagnetic materials, by N. G. Chernysheva
Unified technical policy in the foundry industry to eliminate shortages in castings, by R. Anpilogov
Soviet orders broad construction program of oxygen converter shops at metallurgical enterprises, by E. Turkebaev and G. Bardagov
Award-winning suggestions for savings in electric and thermal power submitted at the 17th All-Union competition.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 103. 18 Mar 63 [36]p. JPRS: 18184.
Order from OTS $1.00 63-21347

Trans. of #Metallurg (USSR) 1962 [v. 7] no. 12, p. 29-30; one unidentified article; and selected articles from Ekonomicheskaya Gazeta (USSR) 1962, no. 49[70] p. 8, 9, 12, 33, 34.

DESCRIPTORS: *Industrial production, *Metallurgy, Steel, Economics, *Turbines, Stainless steel, Cavitation, Austenite, Cast iron, Blast furnaces, Open hearth furnaces, Rolling mills, Pipes, *Machine tools, Scheduling, Iron.

Contents:
Exploiting the potential at the Dneprospetsstal' plant, by B. Sergeev
High-strength alloys for turbine building, by I. Bogachev
At the Cherepovets metallurgical plant, by A. Borodulin
Production at the Kazakh metallurgical plant, by T. Bekenov
New tube mill at the Pervoural'sk tube plant, by F. Danilov
Inefficient operation of machine tools in the industrial enterprixes of the Donetskii sovnarkhoz
Improve the operating efficiency of metallurgical enterprises, by I. Dubson.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 104. 19 Mar 63 [24]p. JPRS: 18221.
Order from OTS $0.75 63-21364

Trans. from Zarya Vostoka (USSR) 1962, 12 Dec, p. 2; Vechernaya Moskva (USSR) 1962, 17 Dec; Pravda, Leningrad (USSR) 1962, 12 Dec, p. 2; Trud, Moscow (USSR) 1962, 27 Dec; Kazakhstanskaya Pravda (USSR) 1963, 16 Dec; 18 Dec.

DESCRIPTORS: *Industrial production, *Metallurgy, Construction, Rolling mills, Foundries, Industrial plants, Management engineering, Steel, Machines.

Contents:
The administrative structure of Transcausian metallurgy should be reorganized, by K. Lezhava
Progress at the Moscow pipe plant, by V. Popov
Inadequate foundry capacity hampers machine production, by M. Dolkart
New types of rolling mills, by R. Topchiev
Construction at the Karaganda metallurgical plant lags behind schedule, by T. Suleimenov and others
Construction of new facilities at Karaganda metallurgical plant is making unsatisfactory progress, by T. Suleimenov and others.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 105. 22 Mar 63 [34]p. JPRS: 18294.
Order from OTS $1.00 63-21390

Trans. of Partiinaya Zhizn' (USSR) [1962] no. 24, p. 16-20; Promyshlennoe Stroitel'stvo i Inzhenernye Sooruzheniya (USSR) 1962 [v. 4] no. 6, p. 11-15, 24-27; and from Pravda, Leningrad (USSR) 1962, 14 Dec; Trud, Moscow (USSR) 1962, 2 Dec.

DESCRIPTORS: *Industrial production, *Metallurgy, *Steel, Iron, *Rolling Mills, Industrial plants, Design, Construction, *Open hearth furnaces, *Hoists, Ball bearings, Pipes, Oxygen

Contents:
Specialization at the Leningrad steel rolling plant, by A. Druzhkov
Introducing oxygen converters in the metallurgical plants of Donetskaya oblast, by B. Olenko
Design and development work at the Tula metallurgical combine, by M. Gorlov
Installation of building structures of an open-hearth shop complex, by V. Golovkin and D. Balinskii
Preparatory work for the installation of structures of a ball-bearing pipe shop, by E. Karuna

Bogdandy, L. von.
VAPORIZATION AND REFINING. Pt. II-B of the [Reaction Kinetics in Iron and Steel Making]. Feb 63, 2700 words.
Order from HB $6.80 HB-5748

Trans. of Archiv [für das] Eisenhüttenwesen (West Germany) 1961, v. 32, no. 5, p. 292-296.

DESCRIPTORS: *Steel industry, *Iron industry, Refineries, Open hearth furnaces, Reaction kinetics, *Vaporization.

Fiedler, W.
CORE-KILLED STEEL FOR THE PRODUCTION OF SEAMLESS TUBES BY THE PIERCING MILL PROCESS. Aug 62.
Order from BISI 14 15s BISI-2841

Trans. of Freiberger Forschungshefte. [Reihe B. Hüttenwesenmetallurgie] (West Germany) 1961, v. 44, p. 79-91.

DESCRIPTORS: *Steel tubing, Steel, Additives, Aluminum, Deoxidation, Desulfurization, Rolling mills.

Fischer, W[ilhelm] A[nton] and Engelbrecht, H[elmut].
SIMULTANEOUS DESULFURIZATION AND DEOXIDATION OF MOLTEN METAL. [1962] [23]p. 9 refs.
Order from SLA $2.60 62-20069

Trans. of Stahl u[nd] Eisen (West Germany) 1955, v. 75, no. 2, p. 70-75 [Max Planck Institut für Eisenforschung (West Germany). Communication-618; Verein Deutscher Eisenhüttenleute (West Germany). Berichte-221]. Another trans is available from SLA mi$2.40, ph$3.30 as 60-18257 [July 55] 13p. and from SLA as #3273.

DESCRIPTORS: *Steel, Impurities, *Separation, Iron, Silicon, Oxides, *Desulfurization, *Deoxidation, Calcium compounds.

For abstract see Technical Translations 5: 33, 1961.

Fischer, W. A. and Uberoi, R.
ZONE MELTING EXPERIMENTS WITH IRON ALLOYS AND COMMERCIAL STEELS. Feb 63, 4900 words.
Order from HB $12.50 HB-5763

Trans. of Archiv [für das] Eisenhüttenwesen (West Germany) 1962, v. 33, no. 10, p. 661-[668]

DESCRIPTORS: *Steel, *Iron alloys, Liquid metals, *Zone melting.

Gohler, M. and Fenzke, H.-W.
CONTRIBUTION TO THE DEOXIDATION OF OPEN-HEARTH MELTS FOR DEEP DRAWING STEELS WITH ALUMINIUM. Aug 62.
Order from BISI £4 10s BISI-2842

Trans. of Freiberger Forschungshefte. [Reihe B. Hüttenwesenmetallurgie] (West Germany) 1961, v. 44, June, p. 92-103.

DESCRIPTORS: Open hearth furnaces, Liquid metals, *Steel, Deoxidation, Additives, *Aluminum.

Golikov, I. N. and Muzalevskii, O. G.
PROSPECTS OF CONTINUOUS CASTING COMBINED WITH ROLLING. Feb 63, 3400 words.
Order from HB $8.90 HB-5800

Trans. of Akad[emiya] Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvest[iya]: Metallurgiya i Toplivo, 1962, no. 5, p. 9-14.

DESCRIPTORS: *Steel, *Casting, *Rolling mills.

Horn, V.
WELD DEPOSIT METAL PRODUCED FOR EXPERIMENTAL PURPOSES BY ELECTROSLAG REMELTING. Feb 63, 1000 words.
Order from HB $2.60 HB-5876

Trans. of Neue Hütte (East Germany) 1962, v. 7 [no. 8] p. 504-505.

DESCRIPTORS: *Electroslag process, Steel, *Welds

Iodko, E. A.
NATURE OF EXTERNAL CRACKS ON CONTINUOUS-CAST (STEEL) SECTIONS. Feb 63, 2700 words.
Order from HB $8.30 HB-5472

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii] Chern[aya] Met[allurgiya] (USSR) 1961, no. 11, p. 60-70.

DESCRIPTORS: *Steel, *Casting, Fracture (Mechanics).

Koblovsky, V.
ULTRASONIC INSPECTION AS A CRITERION OF THE SERVICE PERFORMANCE OF LARGE STEEL FORGINGS. Feb 63, 1400 words.
Order from HB $3.90 HB-5433

Trans. of Hutnicke Listy (Czechoslovakia) 1961, v. 16, no. 3, p. 174-185.

DESCRIPTORS: *Steel, Material forming, *Ultrasonic radiation, Non-destructive testing, Forging.

Kochnov, V. E. and Zlochovakaya, I. I.
INITIAL STAGES IN THE PLASTIC DEFORMATION OF IRON (O Nachalnoi Stadii Plasticheskoi Deformatsii Tekhnicheskogo Zheleza). Nov 62 [6]p. (figs. omitted) 6 refs. RTS 2151.
Order from OTS or SLA $1.10 63-15253

Trans. of Akad[emiya] Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: Met[allurgiya] i Toplivo, 1961, no. 2, p. 60-63.

DESCRIPTORS: Plasticity, *Deformation, *Iron, *Steel, Grain structures (Metallurgy), Electron microscopy, Microstructure.

The surface structure of specimens of low carbon steel deformed by elongation at room temperature is examined.

Legat, A.
THE VALUE OF GRAIN SIZE IN ASSESSING THE HOMOGENEITY OF THE STRUCTURE AND THE TRANSFORMATION BEHAVIOUR OF STEELS. July 62.
Order from BISI £3 10s BISI-2767

Trans. of Härterie-Technische Mitteilungen (West Germany) 1960, v. 15, no. 4, p. 218-222.

DESCRIPTORS: *Grain structures (Metallurgy) *Steel, Transformations, Microstructure, Structural properties.

Ludemann, K.-F., Fiedler, H., and Breunung, G.
CASTING TEMPERATURES AND CASTING OUTPUT IN THE PRODUCTION OF FORGING GRADE INGOT OF PLAIN AND ALLOY STEEL. Aug 62.
Order from BISI -3 10s BISI-2843

Trans. of Freiberger Forschungshefte. [Reihe B. Hüttenwesenmetallurgie] (West Germany) 1961, v. 44, p. 104-115.

DESCRIPTORS: *Steel castings, *Casting, Steel, Casting alloys, Production, Temperature.

Marincek, B.
HEAT EXCHANGE DURING THE MELTING OF CAST IRON IN THE CUPOLA. Feb 63, 1600 words.
Order from HB $4.50 HB-5686

Trans. of Giesserei (West Germany) 1962, v. 49, no. 13, p. 377-378.

DESCRIPTORS: *Cupola furnaces, *Heat exchangers, *Cast iron, Melting.

Mitsche, R. and Weinberger, R.
AUSTRIAN DEVELOPMENT WORK IN THE FIELD OF HIGH-STRENGTH CAST IRON. [1962] [20]p.
Order from SLA $1.60 62-20187

Trans. of Radex-Rundschau (Austria) 1953, no. 1, p. 28-35.

DESCRIPTORS: *Cast iron, Liquid metals, Casting, Graphite, Slags, Tensile properties, Austria.

Three methods of developing high-strength cast iron, e.g. overheating, influencing the slag and the formation of globular graphite, are described. A method based on the addition of Ca-Mg-Si-Fe alloys in the ladle with subsequent inoculation with Fe-Si or Ca-Si is described. This method was also applied successfully to acid cupola iron containing up to 0.12% sulfur at temperatures ranging from 1250° to 1350° C. The basic lined cupola furnace was tried as an economic equipment for the production of low-sulfur cast iron. While it proved a thorough success from the metallurgical point of view, the problem of lining life, could not as yet be conclusively solved. Experiments with treatments with strongly active slag in the ladle, which also resulted in the successful reducing of graphite to particles of extreme fineness, are described. (Author)

Patterson, W.
RELATIVE HARDNESS AND DEGREE OF NORMALITY AS CRITERIA FOR THE EVALUATION OF GRAY CAST IRON. Dec. 62, 1600 words.
Order from HB $4.80 HB-5710

Trans. of Giesserei (West Germany) 1958, v. 45, no. 14, p. 385-387.

DESCRIPTORS: *Castings, *Iron alloys, *Hardness, Quality control, Cast iron.

Rudoi, L. S.
FORMATION AND BEHAVIOR OF CONTINUOUSLY CAST STEEL SECTIONS IN THE MOLD. Feb 63, 1700 words.
Order from HB $5.80 HB-5567

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 2, p. 51-55.

DESCRIPTORS: *Steel, *Casting, Mechanical working, Material forming.

Taxhet, H., Thomich, W., and Winterfeld, F.
COMPARISON OF ROUTINE SAMPLING PROCEDURES FOR THE DETERMINATION OF HYDROGEN IN LIQUID STEEL. Feb 63, 4400 words.
Order from HB $12.50 HB-5747

Trans. of Stahl und Eisen (West Germany) 1962, v. 82, no. 22, p. 1561-1565.

DESCRIPTORS: *Steel, *Liquid metals, *Hydrogen, Determination, Sampling.

Vyshkovskii, Yu. G.
EFFECT OF COLD TREATMENT OF TOOL STEELS UPON THEIR MECHANICAL PROPERTIES. Feb 63, 2300 words.
Order from HB $6.50 HB-5780

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 10, p. 111-118.

DESCRIPTORS: *Tool steel, *Cold-working, Mechanical properties.

Wyss, U.
CAUSE AND CONTROL OF SECONDARY BAND STRUCTURE IN STEEL. [1961].
Order from BISI £5 5s BISI-1988

Trans. of Härt[erie]-Techn[ische] Mitt[eilungen] (West Germany) 1960, v. 15, no. 1, p. 14-19.

DESCRIPTORS: *Steel, Control, Structural properties, *Grain structures (Metallurgy) Transformations.

Light Metals

Kroll, W. J.
PROBLEMS OF TITANIUM METALLURGY. [1962] [18]p. 41 refs.
Order from SLA $1.60 62-20095

Trans. of Metall (West Germany) 1955, v. 9, no. 1/2, p. 1-6.

DESCRIPTORS: *Titanium, Metallurgy, Oxides, Iron compounds, Titanium compounds.

Rummel, Th., Esmarch, W., and Beuther, K.
DEGASSING OF ALUMINUM BY SOUND AND ULTRASOUND. [1962] [10]p.
Order from SLA $1.10 62-20082

Trans. of Metallwirtschaft [Metallwissenschaft, Metalltechnik] (Germany) 1940, v. 19, p. 1029-1033.

DESCRIPTORS: *Aluminum, Degasification, Sound, Ultrasonic radiation, *Aluminum alloys, *Magnesium alloys.

Two different avenues of approach were taken in the test program. Externally generated sound waves were introduced into the melt by means of suitable transmitting agents. The vibrations were generated within the melt itself by relying on the ponderomotoric action between alternating currents of sonic frequency and a static magnetic field. The shortest degassing periods were

obtained with the second method. Other sources of sonic energy used in the tests were signal horns and, for higher frequencies, magnetostriction oscillators. Because of their pronounced sensitivity to atmospheric humidity, the Mg-containing aluminum-alloys cannot be degassed effectively and consistently, unless all moisture is completely kept away by covering the bath with a protective layer of salt and by providing a dry atmosphere above the layer of salt. If these precautionary measures are taken,even the Mg-rich aluminum alloys may be degassed rapidly and consistently. (Author)

Schriel, M.
ON THE ACTION OF BARIUM (METAL) ON BARIUM OXIDE AT HIGH TEMPERATURES. Excerpts from thesis, Technische Hochschule, Charlottenberg, Nov 35. 1952, 9p. (figs. tables refs. omitted).
Order from SLA $1.10 62-18686

Trans. of Zeits[chrift] f[ür] Anorg[anische] Chem[ie] (Germany) 1937, v. 234, 8 Apr, p. 313-326.

DESCRIPTORS: *Barium, *Barium compounds, Oxides, Metals, High temperature research.

Wallbaum, H. J.
ON THE ROLLING- AND RECRYSTALLIZATION TEXTURES OF PURE ALUMINIUM. [1962] 11p. (figs. tables omitted).
Order from SLA $1.60 63-10003

Trans. of Z]eitschrift für] Metallkunde (West Germany) 1951 [v. 42] Dec, p. 371-376.

DESCRIPTORS: *Recrystallization, *Aluminum, *Sheets, Deformation, *Crystal structure, X-rays, Analysis, Metallurgy.

X-ray investigation of textures of pure aluminium sheet (99.5%) showed that recrystallization textures as well as rolling textures are determined by the degree of rolling. With increasing degree of rolling and decreasing sheet-thickness the following rolling textures at the interior of the sheets were established: Hot-rolling texture (14mm. sheet, 550°): approximating the (110) (112)-position. Cold-rolling texture (to about 0.5 mm. sheet thickness): mixed texture ((110) (112) + (112) (111) + (100) (001)). Cold-rolling texture (to about 0.01 mm. sheet thickness): Mixed texture ((112) (111) + (100) (110)). It was noticed that with hot-rolling temperatures below 450° the cube-position (100) (001) was produced. Its formation was ascribed to a mechanical twinning in a transition- position between (110) (112) and (112) (111). The recrystallization textures are, in general, statically identical to the rolling textures. With sheet-thicknesses less than 0.5 mm., however, a (100) (210)-recrystallization texture was found in a limited deformation-interval (about 99.5 to 99.9%), which (texture) could not be found in the deformation-texture. (Author)

Nonferrous (except light) Metals

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 52. 26 Feb 63 [38]p. JPRS: 17810.
Order from OTS $1.00 63-21199

Trans. of Nauchno-Tekhnicheskie Obshchestva SSSR, 1962, [v. 4] no. 11, p. 20-21; Partiinaya Zhizn' Kazakhstana (USSR) 1962 [v. 32] no. 9, p. 34-36; #Tsvetnye Metally (USSR) 1962 [v. 35] no. 9, p. 1-7; Referativnyi [Sbornik]. Ekonomika Promyshlennosti (USSR) 1962, no. 10, p. 94 (1 abstract); Referativnyi Zhurnal. Gornoe Delo (USSR) 1962, no. 10 (8 abstracts).

DESCRIPTORS: *Industrial production, *Metallurgy, *Mining engineering, Design, *Management engineering, *Industrial plants, *Ores (Metal sources), *Copper, *Mercury, Titanium compounds, Oxides, *Garnet, Quartz, *Electrolysis, Selenium, Tellurium, *Gold, *Zinc, Aluminum compounds, Silicates, Iron compounds, Oxides.

Contents:
Achievements of public design offices at the Degtyarsk mine, by V. Tuzin
Kazakh nonferrous metal producers achieve profitable operation, by P. Egorov and Kh. Kozhakhmetov
Progress of Soviet nonferrous metallurgy during 1962, by I. A. Strigin
The conditions and development of mining operations at the Blyavinskie copper ore deposits, by B. Aleksandrov
Peculiarities of mining of one of the complex mercury deposits of Central Asia, by L. Cheremushkin
Stripping and systems of underground mining of ore deposits, by B. Petrov
The application of a combined system of mining using a flexible metallic ceiling at the Kadamdzhaiskii mine, by D. P. Lobanov and others
Results of investigations with concentration of sillimanite and disthene ores of Eastern Sheria, by I. Margolin
Complete utilization of rutile-garnet ore, by L. Barskii
Removal of impurities from quartz by electric separation, by V. Olevskii
Methods of recovery of selenium and tellurium from gold-bearing ores and their conversion products, by S. Lin'kova
The problem of affiliation of zinc production with copper production (as practiced in the Urals) by V. A. Karsukina

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 58. 4 Apr 63 [63]p. 3 refs. JPRS: 18562.
Order from OTS $1.75 63-21511

Trans. of Nauchno-Tekhnicheskie Obshchestva SSSR, 1962 [v. 4] no. 12, p. 18-19; Geologiya Rudnykh Mestorozhenii (USSR) 1962, no. 6, p. 54-56; Razvedka i Okhrana Nedr (USSR) 1962 [v. 28] no. 12, p. 28-30; and 7 selected articles from Jan 63 issues of 7 Russian newspapers

DESCRIPTORS: *Industrial production, *Metallurgy, Scientific organizations, *Oxygen, *Smelting, Reduction, Economics, Zinc, Lead, Cadmium, Indium, *Furnaces, *Mining engineering, *Industrial plants, Construction, *Geological survey, *Cobalt, *Ores, *Mica, Management engineering

Contents:
Engineering societies help expand the metallurgical industry in the Urals, by N. Pecherskikh
The uses of oxygen in nonferrous metallurgy, by A. Vartan'yan and A. Snurnikov
Oxygen helping metallurgy in Ust'-Kamenogorsk
Rare metals recovered from waste
Smelting furnaces operating with oxygen
Measures for the modernization of ore mining operations in Kazakhstan, by A. Barskii
Lack of unified management hampers plant construction in Kirgiziya, by N. Lunin
Shortcomings in the fulfillment of plans of plant construction in Kazakhstan, by T. Kurbatova
Mineral associations and conditions of the formation of cobalt deposits in Northeastern Yakutiya, by I. Ya. Nekrasov and G. N. Gamyanin
Conservation of mineral resources and ore geology, by M. M. Bocharnikov and V. M. Sedykh

Gel'd, P. V. and Shveikin, G. P.
CERTAIN PROBLEMS IN THE CARBOTHERMIC REDUCTION OF NIOBIUM PENTOXIDE. 22 Mar 63 [14]p. 11 refs. JPRS: 18277.
Order from OTS $0.50 63-21384

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo, 1959, no. 1, p. 44-49.

DESCRIPTORS: *Industrial research, *Reduction (Chemistry), *Niobium compounds, *Oxides, Carbon compounds, Carbides, Dynamics

Structural Metallurgy and Corrosion

Colombier, L.
HIGH TEMPERATURE CORROSION RESISTANT STEELS AND ALLOYS (Les Aciers et Alliages Resistant a la Corrosion aux Temperatures Elevees). [1962] 18p.
Order from SLA $1.60 62-18741

Trans. of Metaux (Corrosion-Industries) (France) [1955] v. 30, July/Aug, p. 294-303.

DESCRIPTORS: *Corrosion-resistant alloys, *Stainless steel, Heat resistant alloys, Oxidation inhibitors, *Corrosion research.

Eichborn, J. L. von.
WETTING OF METALS BY WATER. [1962] 34p. 33 refs.
Order from SLA $3.60 62-18838

Trans. of Werkstoffe und Korrosion (West Germany) 1951, v. 2, p. 212-221.

DESCRIPTORS: Metals, *Mercury, *Gold, *Silver, Platinum, Nickel, Brass, Copper, Zinc, *Surface-active substances, *Water vapor, Absorption, Hysteresis, Surface tension, Adhesion, Catalysis, Electrochemistry

Kunz, H.
FLAME STRESS RELIEVING OF LARGE WELDED STRUCTURES IN SHIP AND CONTAINER CONSTRUCTION. [1962] [44]p. 15 refs.
Order from SLA $4.60 62-20051

Trans. from Mitt[eilungen] der B E F A (West Germany) 1954, no. 11.

DESCRIPTORS: *Stresses, Mathematical analysis, *Welds, Steel, *Annealing, *Heat treatment, *Ship structural components, Storage tanks, *Containers, Furnaces, *Industrial equipment, Construction, Measurement.

Lehr, K.
A NEW CORROSION TEST FOR SMALL (ELECTROPLATED) PARTS. Feb 63, 1700 words.
Order from HB $4.80 HB-5862

Trans. of Metalloberfläche (West Germany) 1962, v. 16, p. 245-246.

DESCRIPTORS: Machines, Structural parts, Electrodeposition, *Electroplating, *Electroplated materials, *Corrosion, Climatic factors.

Meyer, G.
CHROMATES AS MODERN CORROSION INHIBITORS. 27 Feb 63.
Order from TTIS $21.00 TTIS-2440

Trans. of Farbe u[nd] Lack (West Germany) 1962, v. 68 [no. 12] p. 853-859.

DESCRIPTORS: *Chromates, *Corrosion inhibition, Protective treatment.

Moreau, J. and Benard, J.
SELECTIVE OXIDATION OF IRON-CHROMIUM ALLOYS NEAR THE DISSOCIATION EQUILIBRIUM OF CHROMIUM SESQUIOXIDE (Oxydation Selective des Alliages Fer-Chrome au Voisinage de l'Equilibre de Dissociation de Cr_2O_3). [1962] [36]p. (foreign text included) 13 refs.
Order from SLA $3.60 62-18897

Trans. of J[ournal de] Chim[ie] Phys[ique] (France) 1956, v. 53, p. 787-797.

DESCRIPTORS: *Iron alloys, *Chromium alloys, Oxidation, *Chromium compounds, *Oxides, Dissociation, Reaction kinetics, Thermodynamics, *Crystal growth, *Domains (Crystallography), Microstructure.

Roeschenbleck, B.
THE CORROSION VELOCITY AS A FUNCTION OF POLARISATION RESISTANCE AND pH - VALUE [PT.] II. [1962] [10]p. (figs. tables refs. omitted).
Order from SLA $1.10 62-18915

Trans. of Metalloberfläche (West Germany) 1962, v. 16, no. 3, p. 65-69.

DESCRIPTORS: *Corrosion, Velocity, *Polarization, *Hydrogen ion concentration, Equations, Chromium, Iron, Alloys, Electrochemistry.

Rozenfel'd, I. L. and Zhigalova, K. A.
THE RATE OF OXYGEN DEPOLARIZATION IN ATMOSPHERIC CORROSION OF METALS. [1962] 4p.
Order from ATS $6.25 ATS-15P66R

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1954, v. 99, no. 1, p. 137-140.
DESCRIPTORS: *Metals, *Corrosion, *Atmosphere, *Oxygen, Polarization.

Schwitzer, M. K.
NEW METHODS OF PREVENTING METAL CORROSION BY USE OF CATIONIC COMPOUNDS. [1962] [6]p. 27 refs.
Order from SLA $1.10 62-20375

Trans. of Fette Seifen Anstrichmittel (West Germany) 1962, v. 64, no. 2, p. 110-113.

DESCRIPTORS: Metals, *Corrosion inhibition, Alkyl radicals, Amines, *Protective treatments.

Schlaepfer, P. and Bukowiecki, A.
CORROSION BY MOTOR FUELS. 1 Mar 50, 17p. (figs. formulae tables refs. omitted).
Order from SLA $1.60 62-20358

Trans. of Schweizer Arch[iv fllr Angewandte Wissenschaft und Technik] 1948 [v. 14, no. 9] p. 257-274.

DESCRIPTORS: *Metals, *Corrosion, Fuel oil, Containers, Storage, Corrosion research, *Fuels.

Solomin, N. V. and Galdina, N. M.
INVESTIGATION OF THE CORROSION OF REFRACTORY MATERIALS BY GLASS COMPOSITIONS (Issledovanie Raz"edaniya Ogneuporov Steklomassami). [1962] [20]p.
Order from OTS or SLA $1.60 62-18205

Trans. of Vsesoyuz[nyi] Nauch[no]-Issledovatel'[skii] Inst[itut] Stekla. Trudy (USSR) 1956, v. 36, p. 43-50.

DESCRIPTORS: *Refractory materials, Corrosion, *Glass, Melting, *Quartz, Chemical reactions.

Tomashov, N. D.
DEVELOPMENT OF THE ELECTROCHEMICAL THEORY OF METAL CORROSION. Feb 63.
Order from BISI $7 BISI-2476

Trans. of Acta Technica (Hungary) 1961, v. 32, no. 1/2, p. 163-183.

DESCRIPTORS: Electrochemistry, Theory, Metals, *Corrosion, Soils, Atmosphere.

Zareckii, E. M.
EFFECT OF DEFORMATION ON THE CORROSION OF METALS. [1962] 8p. (figs. tables [refs.] omitted).
Order from OTS or SLA $1.10 63-10037

Trans. of #Zhurnal Prikladnoi Khimii (USSR) 1951 [v. 24, no. 5] p. 477-484.

DESCRIPTORS: *Deformation, *Corrosion, Metals, *Magnesium alloys, *Aluminum, *Zinc, *Copper, *Steel, Electrical properties.

Residual deformation from 0 to 90% of strength limit has no effect on the speed of corrosion of the magnesium alloy MA-1 in a 1 mol NaCl solution. With exposure to air, with an increase in deformation the speed of corrosion of the MA-1 alloy at first decreases slightly and then increases but does not assume the initial importance. The speed of corrosion of the MA-3 alloy in a 0.1 mol. NaCl solution increases slightly with an increase in deformation and then decreases again. With exposure to air the speed of corrosion at maximum deformation is slightly less than in the non-deformed state. The speed of corrosion of the MA-8 alloy in a 0.1 mol. NaCl solution decreases slightly with an increase in deformation. An investigation carried out with exposure to air shows analogous uniformity. In solution of 0.5 mol. NaCl and 0.3 mol. HCl the speed of corrosion of aluminium increases with an increase in deformation. The corrosion of zinc in 0.125 mol. of H_2SO_4 increases with an increase in deformation. In a 0.1 mol. of $(NH_4)_2 S_2O_8$ the speed of corrosion of copper slightly decreases with an increase in deformation. In a 0.005 mol. H_2SO_4 solution deformtion shows almost no effect on the corrosion of copper. In a 1.5 mol. H_2SO_4 solution the speed of corrosion of steel 10-20 increases with an increase in deformation. (Author)

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 126 (PHYSICS AND MATHEMATICS SERIES). 3 Apr 63 [18]p. JPRS: 18526.
Order from OTS $0.50 63-21493

Consists of abstracts of articles from the scientific and technical journals of Czechoslovakia and East Germany.

DESCRIPTORS: *Abstracts, Literature, East Germany, Czechoslovakia, *Physics, *Nuclear physics, Solid state physics, Radiation measurement systems, Geiger counters, Ion sources, Radioactive waste, Reactor fuels, Nuclear reactors

TRANSATOM BULLETIN, 1963, VOL 3, NO. 1, P. 1-70. Jan 63, 1v.
Order from Elsevier Publishing Co., Jan van Galenstraat 335, Amsterdam, Netherlands, $15.00/year

Consists of listing of existing and new translations of nuclear literature, planned by international or national institutions and private firms in Europe, U.S., United Kingdom or other countries.

DESCRIPTORS: *Bibliographies, *Translations, *Nuclear physics, Physics, *Radiochemistry, Mathematics, Computers, Geology, Mineralogy, Meteorology, *Radiobiology, *Materials, Metals, Ceramic materials, *Nuclear engineering, Radiation measurement systems, Nuclear reactors, Radioactive isotopes, Isotope separation, Nuclear industrial applications, Food, Natural radioactivity, Health physics, Radioactive waste disposal, *Atomic energy engineering

Arifov, U. A.
ON THE QUESTION OF THE CHARGE, MASS, AND ENERGY BALANCE IN THE COLLISION OF SLOW IONS WITH SOLID STATE ATOMS. 7 Nov 62 [23]p. 7 refs. FTD-TT-62-851.
Order from OTS or SLA $2.60 63-15507

Unedited rough draft trans. of mono. Konferentsiya po Mirnomu Ispol'zovaniyu Atomnoi Energii, Tashkent, 1959. Trudy, v. 1, 1961, p. 210-222.

DESCRIPTORS: *Ion beams, Ions, Atomic charge, Atomic mass unit, Atomic energy levels, *Particle accelerator targets.

The procedure described for studying secondary phenomena allows one to investigate separately the behavior of the inertial and inertialess components of secondary current and thereby decipher a whole series of complicated processes occurring simultaneously on the surface of a solid under the action of atomic particle bombardment. The application of the new investigational procedure makes it possible to draw up the charge and mass balance of ions interacting with solid state atoms. A theoretical analysis of the oscillographic data allows us to draw up the energy balance for the collision of ions with surfaces of solids and calculate the accomodation coefficient of the ion beam. (Author)

Flerov, G. N., Donets, E. D., and Druin, V. A.
SPONTANEOUS FISSION AND SYNTHESIS OF FAR-TRANSURANIUM ELEMENTS. 5 Mar 63 [20]p. 28 refs. JPRS: 17965.
Order from OTS $0.50 63-21256

Trans. of #Atomnaya Energiya (USSR) 1963, v. 14, no. 1, p. 18-26.

DESCRIPTORS: *Transuranium elements, Fission, Synthesis, *Ion bombardment, Nucleons, Atomic energy levels.

A review of the literature with emphasis on synthesis with the aid of multiple charged ions.

Forcrand, R. de.
THE HYDRATE OF XENON. [22 Nov 61] 3p.
Order from SLA $1.10 63-10111

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1925, v. 181, p. 15-17 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Xenon, Gases, Rare gases, *Hydrates, Dissociation, Heat of formation.

Godchot, M. and others.
DEUTERIOHYDRATES OF KRYPTON AND XENON. [Nov 61] 2p. 3 refs.
Order from SLA $1.10 63-10113

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1936, v. 202, p. 759-760 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Xenon, *Krypton, *Deuterated compounds, *Hydrates.

Guill, J. H., compiler.
DEFINITION OF RADIATION UNITS: SOVIET COMMENTS. 11 Sep 58 [39]p. 17 refs. DC 58-9-84.
Order from OTS or SLA $3.60 63-15814

Trans. of Izmeritel'naya Tekhnika (USSR) 1955, no. 1, p. 31-35 and 1956, no. 1, p. 15-16, 18-23.
Other translations are available from SLA separately as R-4060, R-4059, R-4063, R-4062.

DESCRIPTORS: Standardization, *Radiation measurement systems, Radioactivity, X Rays, Gamma rays,

Contents:
Comments on the problem of the new definition for the units of x and gamma-radiations and radioactivity, by M. F. Yudin
On the definition of the roentgen, by P. M. Tikhodeev
More on the problem of roentgen definition, by M. F. Yudin
Definition of the roentgen in connection with this unit's application for all ionizing radiations, by I. V. Poroikov.

Haissinsky, M.
FUNDAMENTAL PROBLEMS OF THE RADIOLYSIS OF AQUEOUS SOLUTIONS, tr. by J. C. Ruckman. 1960 [14]p. UKAEA DEG-Inf Ser. 53 (D).
Order from OTS or SLA $1.60 62-32393

Trans. of Industries Atomiques (Switzerland) 1959, v. 3, no. 3/4, p. 37-46.

DESCRIPTORS: *Radiochemistry, Solutions, *Radiolysis, Catalysis, Free radicals.

Hejtmanek, Hans.
AN ANALYTICAL METHOD OF SOLUTION FOR THE ENERGY DEPENDENT NEUTRON TRANSPORT PROBLEM (Eine Analytische Losungsmethode für das Energieabhangige Neutronentransportproblem). [1962] [12]p. 5 refs.
Order from SLA $1.60 62-18172

Trans. of Atomkernenergie (West Germany) 1961, v. 6, no. 9, p. 350-353.

DESCRIPTORS: Energy, Analysis, *Neutron transport theory, *Geometry, Integral equations, *Integral transforms.

This paper treats the energy dependent neutron transport problem for plane geometry. From first principles we get the integral equation of this problem. This equation is solved using a Fourier-Mellin transform. (Author)

Iliescu, C.
THE BETATRON AT THE INSTITUTE OF ATOMIC PHYSICS OF THE RUMANIAN ACADEMY OF SCIENCES. 2 Apr 63 [5]p. JPRS: 18505.
Order from OTS $0.50 63-21483

Trans. of Tehnica Noua (Rumania) 1962, v. 9, no. 52, p. 1 and 3.

DESCRIPTORS: *Betatrons, *Particle accelerators, Nuclear physics, *Rumania.

The design and application of the betatron for nuclear physics research are discussed.

Sokhina, L. P. and Gel'man, A.D.
DÉCOMPOSITION DES COMPLEXES OXALATES DU PLUTONIUM SOUS L'EFFET DU RAYONNEMENT α [Decomposition of Complex Oxalate Compounds of Plutonium Under the Action of Alpha Radiation] tr. by M. Garber. 29 Mar 62 [12]p. 3 refs. CEA Trans. no. R 1515 (text in French).
Order from OTS or SLA $1.60 62-33731

Trans. in French of #Zh[urnal] Neorg[anicheskoi] Khim[ii] (USSR) 1960, v. 5, no. 5, p. 1013-1015.

DESCRIPTORS: *Plutonium compounds, *Oxalates, *Complex compounds, Decomposition, Radiation effects, *Alpha particles.

Instruments and Installations

Kodochigov, Petr Nikolaevich.
PRACTICAL PROBLEMS IN IONIZING RADIATION DOSIMETRY: SELECTED PARTS. 4 Apr 63 [14]p. JPRS: 18552.
Order from OTS $0.50 63-21506

Trans. of mono. O Prakticheskikh Voprosakh Dozimetrii Ioniziruyushchikh Izluchenii, Moscow, 1962, p. 23-26 and 74-78.

DESCRIPTORS: *Dosimeters, Health physics instrumentation, *Health physics, *Radiation tolerance, Man, Air, Water, Contamination, Radiological dosage, Radiological contamination, Radioactivity.

Contents:
Soviet research in radiation control
The maximum safe quantity of radioisotopes in the human organism
The maximum safe concentration of radioactive substances in air and water.

Kuznetsov, A. B. and Myznikov, K. P.
INVESTIGATION OF THE CHARACTERISTICS OF THE BEAM OF PROTONS ACCELERATED IN THE 10 BEV SYNCHROPHASOTRON (Issledovanie Kharakteristik Puchka Protonov, Uskorennykh v Sinkhrofazotrone na 10 Bev) tr. by D. A. Nimidoff. June 62 [31]p. (foreign text included).
Order from OTS or SLA $3.60 UCRL Trans-843

Trans. of Joint Institute for Nuclear Research (USSR) P-787, 1961, 18p.

DESCRIPTORS: *Proton beams, *Proton accelerators, Particle accelerators, Synchrotrons.

The results of investigating the characteristics of the beam accelerated up to a final energy in the 10 BeV synchrophasotron are reported. The methods of investigating are described. There have been determined: the filling of the phase stability region, the distribution in betatron oscillation amplitudes, the magnitude of the energy spread of particles in an accelerated beam. (Author)

Nuclear Engineering and Power

FISSION GAS RELEASE FROM URANIUM DIOXIDE. Quarterly rept. 5, 1 Jan-31 Mar 62, on Contract 021-60-9 RDI. [1962] 22p. FN-E-22.
Order from OTS or SLA $1.60 EURAEC-311

Trans. of a rept. from Fiat, S.A., Turin (Italy) 30 Apr 62.

DESCRIPTORS: *Uranium compounds, *Dioxides, Pellets, *Fission product activity, Fission products, *Xenon.

Miller, V. S.
THE NATURE OF CONTACT HEAT TRANSFER IN REACTOR FUEL ELEMENTS. [1962] 9p. 5 refs.
Order from OTS or SLA $1.10 AEC-tr-5410

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Energetika (USSR) 1962 [v. 5] no. 3, p. 67-70.

DESCRIPTORS: *Reactor fuel elements, Reactor cores, Reactor fuel cladding, *Heat transfer, Compressive properties.

The contact heat transfer between the core and cladding of a fuel element depends on such factors as the compression force, the physical nature of the contact bond, the properties of the medium in the interstices, the average temperature of the boundary, and also on the effect of radiation on the properties of the contact materials.

Rassokhin, N. G. and Mel'nikov, V. N.
THE STABILITY OF ZIRCONIUM ALLOYS IN A CIRCULATING AQUEOUS MEDIUM. [1962] 10p. 4 refs.
Order from OTS or SLA $1.10 AEC-tr-5414

Trans. of Teploenergetika (USSR) 1962 [v. 9] no. 2, p. 60-62.

DESCRIPTORS: *Reactor fuel cladding, *Zirconium alloys, Niobium alloys, Corrosion, Erosion, Stability, Nucleate boiling, Scale.

The effect of surface boiling on the corrosion-erosion stability of a zirconium alloy containing 0.95% niobium is investigated. The results of a qualitative study of the effect of surface boiling on the rate of scale formation on the hot surface are presented. (Author)

Roux, J. P.
NUCLEAR PROJECTS OF ELECTRICITE DE FRANCE IN PROCESS AND BEING PLANNED, PTS. III-IV, tr. by H. W. Curtis. 1959 [20]p. 1 ref. UKAEA IG Information Series 36 (RD/R) [DSIR NLL M. 2253].
Order from OTS or SLA $1.60 62-32391

Trans. of Revue Générale de l'Électricite (France) 1959 v. 67, no. 7, p. 354-364.

DESCRIPTORS: *Nuclear engineering, *France, *Nuclear power plants, Electrical engineering, *Electric power production, Carbon dioxide, Reactor coolants, Graphite moderated reactors, Power plants (Establishments), Auxiliary power plants

Contents:
Chinon Power Station of Electricite de France
The E. D. F. 2 Plant and the programme following the Chinon Power Station

PHYSICS

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 119 (PHYSICS AND MATHEMATICS SERIES). 28 Mar 63 [12]p. JPRS: 18418.
Order from OTS $0.50 63-21450

Consists of abstracts of articles from the scientific and technical journals of Czechoslovakia and Poland.

DESCRIPTORS: *Abstracts, Literature, Poland, Czechoslovakia, *Physics, *Mathematics, *Nucleonics, Cybernetics, Education, Economics, Conferences, Coincidence counting, Critical assemblies, Tracer studies, Ions, Inorganic acids, Uranyl radicals, Salts, Soils, Contamination, Integrators, Towers (Chemistry), Cyclotrons, Voltage regulators

PHYSICS EXPRESS, 1963, VOL. 5, NO. 5. 1963, 40p.
Order from International Physical Index, Inc., 1909 Park Ave., New York 35, N. Y. $57.50/year

New comprehensive digest of current Russian literature dealing with physics topics.

DESCRIPTORS: *Physics, *Plasma physics, *Atomic structure, *Atomic spectroscopy, *Relativity theory, *Cryogenics, *Superconductivity, *Electromagnetic waves, *Shock waves, *Nuclear energy, *Cosmic rays, *Elementary particles, Accelerators, *Geophysics, Astronomy, Solid state physics, *Semiconductor devices, *Field theory, *Nuclear structure.

THE SELECTION OF SOLVENTS FOR ELECTROSTATIC SPRAYING. 27 Feb 63.
Order from TTIS $6.00 TTIS-8019

Trans. of Pitture e Vernici (Italy) 1962, v. 38, Jan, p. 6-8.

DESCRIPTORS: Selection, *Solvents, *Electrostatics, *Sprays.

Alekseevskii, N. E. and Mikhailov, N. N.
SUPERCONDUCTING SOLENOIDS CONTAINING Nb_3Sn FOR STRONG MAGNETIC FIELDS. [1962] 4p. 6 refs.
Order from OTS or SLA $1.10 62-18712

Trans. of #Zhur[nal] Eksp[erimental'noi i] Teoret[icheskoi] Fiziki (USSR) 1961, v. 41, no. 6, p. 1809-1810.

DESCRIPTORS: *Cryogenics, *Superconductors, Solenoids, Powder metals, *Niobium compounds, *Stannides, Magnetic fields.

Data of superconducting solenoids prepared from Nb_3Sn and the curve of the dependence of the critical current on the external magnetic field for this compound are given. (Author)

B., D. and S., A.
CONGRESS OF HUNGARIAN PHYSICISTS (NO. 9) DEBREGEN, 1962. 4 Apr 63 [9]p. JPRS: 18564.
Order from OTS $0.50 63-21513

Trans. of Fizikai Szemle (Hungary) 1962, v. 12, no. 12, p. 357-360.

DESCRIPTORS: *Conferences, *Physicists, *Hungary.

Pyatnitskii, L. N.
ON THE MECHANISM OF FLAME ACCELERATION IN THE TRANSITION FROM NORMAL BURNING TO DETONATION. 7 Dec 62, 11p. 10 refs.
FTD-TT-62-1441.
Order from OTS or SLA $1.60 63-15570

Unedited rough draft trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 144, no. 6, p. 1262-1265.
Another trans. is available from OTS or SLA $1.10 as 62-20429 [1962] 4p.

DESCRIPTORS: *Flame propagation, Velocity, *Combustion, *Detonation, Fluid dynamic properties, Shock waves, Laminar boundry layer, Turbulent boundry layer.

Acoustics

Grandjet, Walter.
ARRANGEMENT FOR TRANSMISSION AND RECEPTION OF SPEECH BY SOUND WAVES, PARTICULARLY IN WATER, tr. by J. R-P. 10 Aug 62, 10p. (figs. omitted).
Order from OTS or SLA $1.10 62-32915

Trans. of German patent 675,278, cl. 74d, gr. 6/08, by Atlas-Werke AG, pat. from 15 Nov 35, pat. grant announced 13 Apr 39, pub. 4 May 39.

DESCRIPTORS: Speech, *Speech transmission, Sound, *Underwater sound, Hearing, Thresholds (Physiology).

Klyukin, Igor' Ivanovich.
CONTROL OF NOISE AND SONIC VIBRATION IN SHIPS. 18 Mar 63 [419]p. 173 refs. JPRS: 18177.
Order from OTS $6.00 63-21340

Trans. of mono. Bor'ba s Shumom i Zvukovoi Vibratsiei na Sudakh, Leningrad, 1961, 355p.

DESCRIPTORS: Control, Measurement, *Ship noise, Sound transmission, *Sound, *Vibration, Vibration insulation, Acoustic insulation, Design, Construction, Acoustic equipment, Noise

This book discusses the sources of noise in ships and explains the bases for controlling noise and vibration in ships. A short treatment of the fields of physical, physiological and structural acoustics, as well as acoustical measurements, is presented. Modern methods of sound and vibration insulation, and sound and vibration absorption, and methods for measuring these values are described. The causes of the origin of vibrations in machinery and mechanisms are analyzed, and several means and methods for controlling these vibrations are indicated. The material discussed is illustrated by examples and calculations.

Konzok, H.
THE DAMPING OF CAR BODY SHEET WITH SOUND INSULATING MATERIALS. 27 Feb 63.
Order from TTIS $12.00 TTIS-2436

Trans. of Farbe u[nd] Lack (West Germany) 1954, v. 60, Aug, p. 315-352.

DESCRIPTORS: *Damping, *Passenger vehicles, Sheets, *Acoustic insulation, Insulating materials.

Krasil'nikov, V. A.
SOUND AND ULTRASOUND WAVES IN AIR, WATER AND SOLID BODIES, 3D ED, tr. by N. Kaner and M. Segal. 1963, 354p. 23 refs. PL-480 NASA: NASA-TT-F-96.
Order from OTS $3.50 62-11034

Trans. of mono. Zvukovye i Ul'travukovye Volny v Vozdukhe, Vode i Tverdykh Telakh, 3d ed, Moscow, 1960 [560p].

DESCRIPTORS: *Mechanical waves, Propagation, *Wave transmission, *Sound, *Ultrasonic radiation, Atmosphere, Water, Solids, *Acoustics.

The book presents in a simple way the basic physical questions connected with the propagation of sound and ultrasound waves in air, water and solids, as well as various applications of these waves. A large section has been allotted to ultrasound waves and their applications, as well as to the propagation of sound in the atmosphere (atmospheric acoustics), in the sea (hydroacoustics), and in the earth (seismology). The propagation of high-intensity sound and ultrasound waves in gases and, particularly, in liquids are discussed, as well as the more important problems of aerothermoacoustics (jet noise, generation of sound by turbulence). The question of the propagation of elastic waves in solids (particularly in metals) is considered, as well as the basic ultrasonic applications in examining the elastic properties of solids. Special attention is given to the physical significance of the various phenomena. The book is intended for people with a secondary education and can be useful to instructors in secondary schools, students, technicians, engineers, marine hydroacousticians, and those working in all fields related to acoustics. (Author)

Kuttruff, H.
ARTIFICIAL REVERBERATION. Presented at the convention of the NTG "100 Jahre Elektroakustik", Frankfurt, 26-28 Oct 61. [1962] 23p. 9 refs.
Order from SLA $2.60 62-18840

Trans. of Frequenz (Germany) 1962, v. 16, no. 3, p. 91-96.

DESCRIPTORS: *Acoustic equipment, Acoustical properties, Vibration, Production, Electronic equipment, Circuits, Feedback, Magnetic tape.

Electricity and Magnetism

Fain, V. M.
RADIATION OF FERROMAGNETIC SYSTEMS. [1962] [10]p. 9 refs.
Order from OTS or SLA $1.10 62-10614

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedenii]. Radiofiz[ika] (USSR) 1959, v. 2, no. 6, p. 876-883. Another trans. is available from OTS $5.00 in 61-21268, JPRS-5651, 30 Dec 60, 356p.

DESCRIPTORS: *Ferrites, Ferromagnetism, Magnetic moments, Electromagnetic waves.

The question of the radiation of ferrimagnetic systems near the point of compensation is analyzed. (Author)

Henkel, O.
THE ANHYSTERETIC SUSCEPTIBILITY OF AGGREGATES OF MAGNETIC SINGLE-DOMAIN PARTICLES. [1962] 9p.
Order from ATS $12.50 ATS-66P66G

Trans. of Phys[ica] Stat[us] Sol[idi] (Germany) 1962, v. 2, p. 1393-1402.

DESCRIPTORS: Particles, *Domains (Crystallography), *Magnetic susceptibility, *Hysteresis.

Krinchik, G. S.
MAGNETO-OPTIC EFFECTS OF FERROMAGNETICS. [1962] 10p. 13 refs.
Order from OTS or SLA $1.10 63-10742

Trans. of Mosc[ow] U. Vest[nik]. Ser[iya] Mat[ematiki] Mekhan[iki] Astron[omii] Fiz[iki] Khim[ii] (USSR) 1955 [v. 10] no. 12, p. 61-67.

DESCRIPTORS: *Magneto-optical effect, *Ferromagnetic materials, Tensor analysis, Electromagnetic properties, Reflection.

A general scheme is developed for constructing a theory of magneto-optic phenomena in case where the substance is characterized by tensor magnetic permeability, i. e. where the magnetic and not the electric vector should be considered as the acting vector of the electromagnetic wave. This theory enables us to obtain from a single consideration, formulae for the Faraday effect, magnetic bi-refringence, and also for the polar, meridial and equatorial Kerr-effects. The expression for the tensor magnetic permeability, borrowed from the theory of ferromagnetic resonance, enables us to determine the magneto-optic parameter in an explicit form, and thus to give these formulae a form which is convenient for a theoretical calculation of all magneto-optic effects in centimeter frequency range. The formula for angle of rotation of the plane of polarization, in case of the Faraday effect, is close to a formula obtained earlier, which was experimentally verified, as well as the formulae obtained for the angle of rotation of polarization in case of the Kerr effect and for the ellipticity of waves in both the Faraday and the Kerr-effects. Of special interest are formulae for the Kerr-effect, which show that rotation of the plane of polarization in the centimeter region can have a value of the order of ten degrees, while in the optical region it is only of the order of a few minutes. (Author)

Polukarov, Yu. M.
OBTAINING COATINGS HAVING PARTICULAR MAGNETIC PROPERTIES. [1962] 26p. 29 refs.
Order from OTS or SLA $2.60 62-20395

Trans. of mono. Electrolytic Precipitation of Alloys, Moscow, 1961, p. 57-75.

DESCRIPTORS: *Coatings, Magnetic properties, *Electrolytes, Chemical precipitation, Alloys, Nickel compounds, Cobalt compounds, *Magnetic materials, Magnetic alloys.

Renne, V. T.
RATE OF SELF-DISCHARGE AS A CRITERION FOR ESTIMATING THE VALUE OF A PAPER CONDENSER WITH D. C. POTENTIAL. 3 Nov 47, 5p. (figs. refs. omitted).
Order from OTS or SLA $1.10 62-20345

Trans. of [Zhurnal Tekhnicheskoi Fiziki] (USSR) 1947, v. 17, no. 1, p. 37-42.

DESCRIPTORS: *Paper capacitors, Direct current, Measurement, Dielectrics, *Electric potential, Electrical conductance, Ionization, Electric discharges.

Investigation was made of the phenomenon of self-discharge of paper condensers as well as a suggestion to apply the rate of self-discharge as a criterion for the evaluation of the quality of these condensers when operated with direct current. It was shown that the nature of the self-discharge rate as a function of the charging potential is analogous to that of the relationship tg delta = f(U) obtained at commercial frequency. It was demonstrated that reduction of the self-discharge rate shows a tendency toward increase of the life of the condenser under prolonged charging. (Author)

Sappa, Oreste.
NATIONAL COMMITTEE FOR PHYSICS PROPERTIES OF FERROMAGNETIC SUBSTANCES IN POWDER. [1955] 7p. (figs. omitted).
Order from SLA $1.10 62-16457

Trans. of [Ricerca Scientifica (Italy) 1937, v. 8, p. 413-421].

DESCRIPTORS: *Ferromagnetic materials, Powders, Magnetic properties, Magnetostriction.

Thal, W.
A NEW MAGNETIC DEVICE FOR THE TESTING OF SOFT IRON. [1962] 6p. (figs. omitted).
Order from SLA $1.10 63-10029

Trans. of Z[ei]ts[chrift] f[ür] Tech[nische] Physik (Germany) 1934, v. 15, p. 469-473.

DESCRIPTORS: *Iron, Magnetic properties, Test equipment, Circuits, Electrical equipment, Instrumentation.

Vicena, F.
ON THE INFLUENCE OF STRESSES PRODUCED DURING PRECIPITATION ON THE COERCIVE FORCE OF FERROMAGNETICS. [1961] 9p. 4 refs.
MDF V-106.
Order from OTS $0.50 62-11610

Trans. of [Chekoslovatskii Fizicheskii Zhurnal] 1955, v. 5, no. 1, p. 11-17.

DESCRIPTORS: *Ferromagnetic materials, *Ferromagnetism, Coercimeters, Energy, Deformation, Crystals, Iron, Stresses, Precipitation.

The influence is investigated of the internal stresses, arising near particles of the precipitated phase at the time of its precipitation in the case of spherical precipitates. Both the possible mechanisms of the influence of the stresses on the boundary layer motion are taken into account, i.e., the influence of the surface tension of the boundary layer and the influence of the internal magnetic charges. It is shown that, despite the opinions of certain authors, the appropriate stresses cannot significantly influence the boundary layer shift and the coercive force in the case of spherical precipitates. The conclusions of this work can be applied directly, for example, to precipitates of Fe_3C in iron. (Author)

Zehnder, L.
ON THE HERTZ EXPERIMENTS WITH ELECTRICAL WAVES (Uber die Hertzschen Versuche mit Elektrischen Wellen) tr. by A. Pingell. Presented at the Meeting of the Electro-Technical Society on 26 May 08. 1957, 22p. 1 ref. N R L Trans. no. 610.
Order from OTS or SLA $2.60 62-25234

Trans. of [ETZ] Elektrotechnische Zeitschrift. [Ausgabe A. Zentralblatt fdr Elektrotechnik] (Germany) 1908, no. 42, p. 1019-1023.

DESCRIPTORS: *Electromagnetic waves, Propagation, Wave transmission, Light, Electricity, Oscillation, *Electromagnetism, Test equipment.

Electronics

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 53 (AUTOMATION AND RADIOELECTRONICS SERIES). 4 Apr 63 [11]p. JPRS: 18560.
Order from OTS $0.50 63-21509

Trans. of selected abstracts from Referativnyi Zhurnal. Avtomatika i Radioelektronika (USSR) 1962, nos. 9-10.

DESCRIPTORS: *Abstracts, Literature, *China, *Automation, *Electronics, Radio equipment, Digital computers, Computer logic, Semiconductor devices, Ferrites, Ionospheric propagation, Radio waves.

Gurevich, A. V.
THE ELECTRON TEMPERATURE OF A PLASMA IN A VARIABLE ELECTRICAL FIELD. [1962] [17]p. (figs. omitted) 12 refs.
Order from OTS or SLA $1.60 62-18283

Trans. of #Zhur[nal] Eksp[erimental'noi i] Teor[etich-eskoi] Fiz[iki] (USSR) 1958, v. 35, no. 2, p. 392-400.

DESCRIPTORS: *Electrons, Temperature, *Plasma physics, *Electric fields, Magnetic fields, Equations, Numerical analysis, Electron density.

The heating of electron gas in a plasma in a variable electric field is considered. It is shown that the electron gas can exist in two stable states with different temperatures; transition from one state to another occurs at certain critical values of the amplitude and is accompanied by an appreciable change in the electron temperature. A peculiar type of hysteresis in the dependence of the electron temperature on the amplitude and frequency exists. The influence of a constant magnetic field on this effect is also taken into account. An expression has been obtained for the complex conductivity of a plasma in a varying electric and constant magnetic fields (taking account of collisions between the electrons). (Author)

Voitsenya, V. S., Kalmykov, A. A. and others.
THE MOTION OF PLASMA BLOBS IN A NON-HOMOGENEOUS MAGNETIC FIELD, tr. by Helen Chick and Edward A. Knapp. [1962] 20p. 4 refs.
Order from OTS or SLA $1.60 AEC-tr-4932

Trans. of Russian preprint of article from unidentified source [1961 ?].

DESCRIPTORS: *Plasma physics, Motion, Magnetic fields, Plasma jets.

Molecular Physics and Spectroscopy

Grenishin, S. G. and Cherkasov, Yu. A.
ELECTROPHOTOGRAPHIC METHOD OF RECORDING SPECTRA. Feb 63, 1200 words.
Order from HB $3.60 HB-5888

Trans. of #Zavodskaya Laboratoriya (USSR) 1963, v. 29, no. 3, p. 175-177.

DESCRIPTORS: *Electrophotography, Records, Spectra (Infrared), Spectra (Visible and Ultraviolet)

Kel'man, V. M. and Gall', L. N.
SPECTROMÈTRES DE MASSES À PRISME MAGNÉTIQUE BIDIMENSIONNEL (Mass-Spektrometry s Dvumernoi Magnitnoi Prizmoi) [Mass Spectrometer with a Two-Dimensional Magnetic Prism] tr. by Fedorovsky. 28 Apr 62 [26]p. (Russian text included) 6 refs. CEA Trans. no. R 1630 (text in French).
Order from OTS or SLA $2.60 62-33746

Trans. in French of #Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1961, v. 31, no. 9, p. 1083-1091.

DESCRIPTORS: *Mass spectrometers, *Prisms, *Magnets, Ions, Magnetic separation.

Nikitina, O. N.
UTILISATION D'ÉLECTRODES DE CARBONE À PAROIS MINCES [Use of Thin-Walled Carbon Electrodes]. 29 Mar 62 [7]p. 3 refs. CEA Trans. no. R 1516 (text in French).
Order from OTS or SLA $1.10 62-33761

Trans. in French of #Zavodsk[aya] Lab[oratoriya] (USSR) 1959, v. 25, no. 12 [p. 1461-1463].

DESCRIPTORS: Spectroscopy, *Carbon arc lamps, *Electrodes, *Silicates, Impurities, Detection.

Sebestyen, Gabor L. and Varadi, Peter F.
NEW VACUUM-TECHNICAL AND CHEMICAL APPLICATION OF THE Rf. MASS SPECTROMETER. I. Rf. LEAK-DETECTOR. [1962] 32p.
Order from K-H $40.00 K-H 11560 a

Trans. from Magyar Kemiai Folyoirat (Hungary) 1955, v. 61, Feb.

DESCRIPTORS: *Mass spectrometers, Vacuum systems, Ionic current, Detection, Radiofrequency spectroscopy, *Leakage detectors.

Optics

Bershtein, I. L. and others.
THEORY OF MICHAELSON'S STELLAR INTERFEROMETER. 13 Mar 63 [10]p. 2 refs. JPRS: 18083.
Order from OTS $0.50 63-21303

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 86, no. 1, p. 47-50.

DESCRIPTORS: *Stars, Optical instruments, *Interferometers, Theory.

Blanc-Lapierre, A. and Dumontet, P.
THE CONCEPT OF COHERENCE IN OPTICS, tr. by Bertha P. Klenova. 13 Aug 54, 4p. 8 refs. TVA 3323.
Order from OTS or SLA $1.10 62-32264

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1954, v. 238, p. 1005-1007 (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: *Optics, Optical images, Light, Sources, Optical properties, Mathematical analysis, Complex variables, Functions.

In the general case of the nonmonochromatic source, the authors define the concepts of coherence, partial coherence, and incoherence for an ensemble of luminous sources. The precise mathematical definitions are given within the limits of the theory of aleatory [depending upon an uncertain contingency] functions. (Author)

Springer, R.
THE MEASUREMENT OF METALLIC LUSTER (BRIGHTNESS). [1962] 13p. (figs. tables refs. omitted)
Order from SLA $1.60 62-20341

Trans. of Z[ei]ts[chrift] f[ür] Elektrochemie (Germany) 1940, v. 46 [no. 1] p. 3-13.

DESCRIPTORS: *Metals, *Brightness, Measurement, Optical analysis.

Veinberg, V. B.
UNDERWATER ILLUMINATION (Podvodnoe Osveshchenie) tr. by E. C. B. P. 11 Feb 63, 11p. 11 refs. I-8202.
Order from OTS $0.50 63-11578

Trans. of Russian language article from unidentified source, n.d., p. 14-20.

DESCRIPTORS: *Underwater, *Illumination, Underwater objects, Visibility, Underwater lights, Light transmission.

Solid State Physics

Borovik, E. S. and Usikova, N. G.
PROPERTIES OF BLENDED BARIUM AND STRONTIUM FERRITES. 4 Jan 63, 11p. 5 refs. FTD-TT-62-1539.
Order from OTS or SLA $1.60 63-15539

Unedited rough draft trans. of #Fizika Metallov i Metallovedenie (USSR) 1962, v. 13, no. 3, p. 470-474.

DESCRIPTORS: *Magnetic materials, *Ferrites, *Barium compounds, *Strontium compounds, Oxides, Magnetic properties, Physical properties, Density.

The aim of increasing the magnetic energy of ferrites is pursued and the results of research on the magnetic properties and several physical properties of blended hard ferrites of composition $Ba_{1-x}Sr_xO \cdot 6Fe_2O_3$ are presented. (Author)

Bresler, A. E., Zabavin, V. I., and Zubko, A. M.
THE X-RAY EXAMINATION OF COKE. 19 Feb 54 [6]p. 3 refs. BritCoke Trans. 29; [DSIR] NLLM. 3368.
Order from OTS or SLA $1.10 62-24828

Trans. of Akademiya Nauk SSSR. Doklady, 1952 [v. 87, no. 4] p. 567-570.

DESCRIPTORS: *Coke, *Coal, X-ray diffraction analysis, Structural properties, Crystal lattices.

Experimental results of the X-ray examination of the structural changes in coke from gas and steam caking coals heated at temperatures ranging from 350° to 1200° provide a basis for the conclusion that the structural basis of the material is not that of three-dimensional crystals, but blocks of lattices lying parallel, and arbitrarily orientated to one another. The intensive growth of the lattices takes place, apparently, at the expense of the carbon released in the process of the separation of volatile matter. (Author)

Brezina, B. and Janovec, V.
STUDY OF ELECTROLYTIC COLORING AND DEGRADATION OF $BaTiO_3$ MONOCRYSTALS (Studium Elektrolytickeho Zabarvovani a Degradave Monokrystalu $BaTiO_3$). [1962] [32]p. (foreign text included) 16 refs.
Order from SLA $3.60 62-18714

Trans. of Silikaty (Czechoslovakia) 1961, v. 5, p. 189-202.

DESCRIPTORS: *Dielectrics, *Single crystals, *Barium compounds, *Titanates, *Color centers, Resistance, Degradation, Electric fields, Electrolysis, *Capacitors.

There is described the electrolytic coloring of $BaTiO_3$ monocrystals in a direct electric field and shown its connection with the variation in the insulating resistance of this dielectric. The mechanism of the formation of color centers in $BaTiO_3$ under the influence of a direct electric field is explained on the basis of the mechanism of a similar phenomenon observed with alkali halides. (Author)

Buckel, W. and Hilsch, R.
INFLUENCE OF CONDENSATION AT LOW TEMPERATURES ON THE ELECTRIC RESISTIVITY AND SUPERCONDUCTIVITY IN VARIOUS METALS. [1962] 22p. 21 refs.
Order from SLA $2.60 62-18837

Trans. of Zeit[schrift] f[ür] Physik (West Germany) 1954, v. 138, p. 109-120.

DESCRIPTORS: *Metals, *Superconductivity, *Resistance (Electrical), Transition temperature, Condensation.

Chigvikhadze, D. M.
A METHOD OF GROWING SINGLE CRYSTALS OF METALS WITH PRESCRIBED SPATIAL ORIENTATION AND NATURAL CRYSTALLOGRAPHIC FACES, tr. by R. C. Murray. 1956 [10]p. 10 refs. A.E.R.E. Lib/Trans. 658.
Order from OTS or SLA $1.10 63-13731

Trans. of Zhur[nal] Tekh[nicheskoi] Fiz[iki] (USSR) 1955, v. 25, no. 5, p. 805-811.

DESCRIPTORS: *Single crystals, *Metallic crystals, *Crystallization, Crystal structure, Microstructure, Zinc, Zinc alloys.

Guillien, R.
EFFECT OF MOISTURE ON THE DIELECTRIC PROPERTIES OF SOLIDS. 30 Sep 47, 11p. (figs. refs. omitted).
Order from SLA $1.60 62-18373

Trans. of Cahiers de Physique (France) 1944, no. 23, p. 43-56.

DESCRIPTORS: *Solids, *Dielectric properties, *Moisture, Absorption.

Gurevic, L. E., Ipatova, I. P., and Urickij, Z. I.
THE OPTICAL EFFECTS IN SEMICONDUCTORS IN THE INFRARED REGION WITH AND WITHOUT A MAGNETIC FIELD. [1962] 7p. 12 refs.
Order from OTS or SLA $1.10 62-18637

Trans. of mono. International Conference on Semiconductor Physics, Prague, 1960. [Proceedings] 1961, p. 328-332.

DESCRIPTORS: *Semiconductors, *Optics, *Infrared radiation, Resonance absorption, *Magnetic fields.

In the presence of a magnetic field H the infrared absorption by free carriers, the Faraday and Cotton-Mouton effects, the photoeffect threshold and the absorption (without the magnetic field) caused by virtual excitations which then annihilate to form phonons was studied.

Haasen, P.
ON THE PLASTIC DEFORMATION OF GERMANIUM AND InSb. [1962] [11]p. 21 refs.
Order from SLA $1.60 62-20332

Trans. of Zeitschrift für Physik (West Germany) 1962, v. 167, no. 4, p. 461-467.

DESCRIPTORS: Plasticity, *Deformation, *Germanium, *Indium alloys, *Antimony alloys, *Semiconductors, Crystals, Stresses, Elasticity, X-ray spectroscopy, Crystal lattice defects, *Intermetallic compounds.

Keller, A.
ELECTRON MICROSCOPY AND LOW ANGLE X-RAY SCATTERING. [1962] 20p. (figs. omitted) 7 refs.
Order from SLA $1.60 62-18810

Trans. of Kolloid Zeit[schrift] (West Germany) 1959, v. 165, no. 1, p. 15-25.

DESCRIPTORS: *Electron microscopy, *X-rays, Scattering, Polymers, *Single crystals, *Electron diffraction analysis, Polyamide plastics, Polyethylene plastics, Microstructure, Crystal structure

Khukhareva, I. and Shal'nikov, A.
THE PROBLEM OF THE SUPERCONDUCTIVITY OF THIN FILMS OF TANTALUM AND NIOBIUM. [1962] 4p. (figs. omitted) 2 refs.
Order from OTS or SLA $1.10 62-20283

Trans. of [Akademiya Nauk] SSSR. Doklady, 1954, v. 99, no. 5, p. 735-736.
Another trans. is available from SLA as R-01006.

DESCRIPTORS: *Superconductivity, *Thin films, *Tantalum, *Niobium, *Superconductors.

Krotova, M. D. and Pleskov, Yu. V.
SURFACE CONDUCTANCE AND POTENTIAL DISTRIBUTION AT THE GERMANIUM-ELECTROLYTE INTERFACE. [1962] 9p. 10 refs.
Order from SLA $1.10 62-20229

Trans. of Physica Status Solidi (Germany) 1962, v. 2, no. 4, p. 411-416.

DESCRIPTORS: *Germanium, Electrolytes, *Semiconductors, Surfaces, Conductivity.

Potential distribution at the germanium - NaOH solution interface was investigated. The contribution of the potential drop through the space charge region in the semiconductor Y to the total potential drop at the interface was determined by means of surface conductance measurements. The change in the potential drop in the ionic part of the electric double layer depending on the change in the electrode potential appeared to be comparable with the change in Y. This shows that the density of the charge trapped by surface states is significant. (Author)

Lifshits, I. M.
CONCERNING THE THERMAL CHARACTERISTICS OF CATENARY AND LAMINAR STRUCTURES AT LOW TEMPERATURES (O Teplovykh Svoistvakh Tsepnykh i Sloistykh Struktur pri Nizikh Temperaturakh). [1962] [29]p. (foreign text included) 6 refs.
Order from OTS or SLA $2.60 62-18125

Trans. of Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1952, v. 22, no. 4, p. 475-486.

DESCRIPTORS: Crystals, *Crystal structure, *Thermodynamics, Heat tolerance, Thermal expansion, Low temperature research, Solid state physics.

Maslov, V. N., Ovodova, A. V., and Nabatova, L. V.
AN INVESTIGATION OF N-TYPE GERMANIUM MONOCRYSTALS BY THE ANODIC ETCHING METHOD. [1962] 10p. 12 refs.
Order from OTS or SLA $1.10 62-18225

Trans. of #Kristallografiya (USSR) 1962, v. 7, no. 2, p. 271-275.

DESCRIPTORS: Tests, *Germanium, *Etched crystals, Anodes, Single crystals, Impurities, Anodes (Electrolytic cell), Electrochemisty, Semiconductors.

Anodic etching can be used for a comparative estimate of the quality of n-type germanium monocrystals regarding the macro- and micro-nonuniformity of impurity distribution. Anodic etching patches correspond to places of local punching in areas of reduced resistivity. (Author)

Pashkovs'kii, M. V. and Volzhens'kii, D. S.
A STUDY OF THE PROPERTIES OF THE $Cu_2O \cdot Nb_2O_5$ and $Cu_2O \cdot V_2O_5$ SEMI-CONDUCTOR SYSTEMS [1962] 10p. 21 refs.
Order from OTS or SLA $1.10 62-18619

Trans. of Ukr[ayins'kyi] Fiz[ychnyi] Zh[urnal] (USSR) 1961, v. 6, no. 4, p. 549-555.

DESCRIPTORS: *Semiconductors, *Copper compounds, *Niobium compounds, *Vanadium compounds, Resistance, X-ray diffraction analysis, Microstructure, Bronze, *Oxides.

On the basis of measurements of resistivity at room temperature, of X-ray-structural and microstructural analyses, it was established that samples of the Cu_2O. Nb_2O_5 system sintered in an atmosphere of air at 1200° C form a mechanical mexture of the original components. The authors confirmed the existence in $Cu_2O \cdot V_2O_5$ alloys of a chemical compound which has hitherto been relegated to the oxygen bronzes. The resistivity of the compound measured on simgle-crystal plates is approximately equal to 10 $ohm^{-1}cm^{-1}$. The temperature relation of the conductivity of the compound with a temperature range of -160 to + 230°C is similar to that of the conductivity of vanadium pentoxide. The view is advanced that in distinction to tungsten bronzes, the copper atoms in cupro-vanadium bronze are bound by a metallic bond and give up their valent electrons to a covalent bond with the oxygen skeleton, forming an additional donor level in the forbidden zone of vanadium pentoxide. (SIC) (Author)

Rzhanov, A. V., Pavlov, N. M., and Selezneva, M. A.
ON THE TEMPERATURE DEPENDENCE OF PARAMETERS OF SURFACE CENTERS OF RECOMBINATION IN GERMANIUM. [1962] [16]p. 8 refs. [USASIA] Trans Log. no. 1165.
Order from OTS or SLA $1.60 62-32617

Trans. from #Fizika Tverdogo Tela (USSR) 1961, v. 3, no. 3.

DESCRIPTORS: *Temperature, Surface properties, Recombination reactions, *Germanium, *Semiconductors, Electron capture.

Investigations are conducted on the temperature dependence of the speed of surface recombination and charge-carrier capture by surface centers in a temperature interval ranging from 328 to 250°K. Results attest to the absence of a temperature dependence of the energy position of the recombination levels and to the presence of temperature dependence for the ratios of the capture cross-sections. (Author)

Theoretical Physics

Handelman, G. M.
COMPTON SCATTERING OF CIRCULARLY POLARIZED QUANTA ON AN ELECTRON WITH A GIVEN SPIN DIRECTION, tr. by Esther Goldberg. 1960 [7]p. 4 refs.
Order from OTS or SLA $1.10 UCRL Trans-415(L)

Trans. of Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1953, v. 25, p. 429-434.

DESCRIPTORS: Quantum mechanics, Quantum statistics, *Compton scattering, Polarization, Electrons.

The cross-section of Compton scattering of circularly polarized quanta on an oriented electron with the aid of Feynman's methods is calculated. Tables and graphs are presented which have been prepared for the purpose of comparing theory with experiment. The greatest difference in scattering cross-sections in magnetized iron for right-hand and left-hand quanta is found for backward scattering through 180°. (Author)

Neumann, J. v. and Wigner, E.
CONCERNING THE BEHAVIOR OF EIGENVALUES BY THE ADIABATIC PROCESS. [1962] 13p. 9 refs.
Order from SLA $1.60 62-18223

Trans. of Physik[alische] Zeitschr[ift] (Germany) 1929, v. 30, p. 467[-473].

DESCRIPTORS: *Quantum mechanics, *Matrix algebra, Real variables, Functions.

Thermodynamics

Kudryashev, L. I. and Zhemkov, L. I.
COLLECTION OF SCIENTIFIC PAPERS, HEAT POWER ENGINEERING: SELECTED ARTICLES. 9 Jan 63 [39]p. 13 refs. FTD-TT-62-1200. NASA N63-12820
Order from OTS or SLA $3.60 63-15330

Unedited rough draft trans. of [Industrial'nyi Institut] Kuibyshev. Sbornik Nauchnykh Trudov (USSR) 1959, no. 8, p. 3-17 and 19-29.

DESCRIPTORS: *Thermal conductivity, *Specific heat, Theory, Differential equations, *Graphite, *Steel, *Heat transfer, Integrals, Linear systems, Thermal radiation, Cooling.

Contents:
Generalization of the theory of regular thermal regime for the case of variable coefficients of heat conductivity and specific heat
Regular heat regime in bodies with internal sources of energy and variable thermophysical properties
Generalization of G. M. Kondrat'ev's theorem for the case of variable coefficients of heat conductivity and specific heat and the use of this generalized theorem to determine thermophysical properties of materials, by L. I. Kudryachev and L. I. Zhemkov.

Kutateladze, S. S.
CRITICAL HEAT FLUXES IN THE FLOW OF A WETTING LIQUID WITH THE CORE [OF THE STREAM] BELOW THE SATURATION TEMPERATURE. [1962] 11p. 17 refs.
Order from OTS or SLA $1.60 AEC-tr-5518

Trans. of Nauchn[ye] Dokl[ady] Vysshei Shkoly. Energ[etika] (USSR) 1959, no. 2, p. 229-239. Another trans. is available from ATS $13.50 as ATS-84P62R [1962] 10p.

DESCRIPTORS: Experimental data, *Thermodynamics, *Hydrodynamics, Nucleate boiling, Boiling, Heat transfer, Vapors, Steam, Convection.

Pines, B. J.
THERMODYNAMICS OF THE PHASE TRANSITIONS OF THE SECOND ORDER. [1962] 12p. 4 refs.
Order from OTS or SLA $1.60 62-18690

Trans. of [Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki] (USSR) 1939, v. 9, no. 8, p. 963[-968].

DESCRIPTORS: *Phase transitions, *Thermodynamics, Phase studies, *Equations of state, Differential equations, Temperature, Pressure, Entropy, Volume.

Transitions of the second order are considered as taking place in a finite interval of temperature and pressure resulting in a finite change in entropy and volume. Validity of the Ehrenfest's equation along the whole transition path has been demonstrated (for the increase in the values of heat capacity and coefficients of expansion and compressibility connected with the transitional process). Conditions at which the Ehrenfest's equation holds over the complete interval of change for these values were pointed out. (Author)

Styrikovich, M. A., Miropol'skii, Z. L., and Chzhao-yuan, Shen.
EFFECT OF NONUNIFORMITY OF HEATING ALONG A LENGTH OF PIPE ON THE MAGNITUDE OF CRITICAL HEAT FLUXES. 5 May 61, 5p. 3 refs.
Order from OTS or SLA $1.10 AEC-tr-4961

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 139, no. 4, p. 859-862.
Another trans. is available from ATS $6.50 as 62-12391, ATS-91N57R [1961] 4p.

DESCRIPTORS: *Heat exchangers, Pipes, Water vapor, Heating.

Tarzimanov, A. A.
HEAT CONDUCTION OF MONATOMIC GASES. [1962] 6p. 13 refs.
Order from OTS or SLA $1.10 AEC-tr-5471

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1961, v. 4, no. 9, p. 86-89.

DESCRIPTORS: Gases, *Helium group gases, *Thermal conductivity, Kinetic theory.

The relationship between the heat conduction of monatomic gases and temperature at 1 atm has been investigated, using the principle of corresponding states and a system of variables $\lambda_{prop.} = \lambda V_{crit.}^{2/3} (M/T)^{1/2}$ and $\tau = T/T_{crit.}$. Experimental points (except for helium) are satisfactorily described by a unified curve. Results of the generalization of viscosity and heat conduction show the coefficient $\varepsilon = \lambda/c_v \eta$ is solely a function of τ in monatomic gases. It follows that the increase in ε with temperature is approximately twice as rapid as that derived from the modified of Enskog. (Author)

Wave Propagation

Lyakhov, G. M.
SHOCK WAVES IN MULTICOMPONENT MEDIA. [1962] 7p. 7 refs.
Order from OTS or SLA $1.10 62-20251

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: [Mekhanika i Mashinostroenie] 1959, no. 1, p. 46-49.
Other translations are available from OTS or SLA $1.10 as 60-31882, JPRS-6177, 3 Nov 60, 8p. and from OTS $0.50 as 61-11165, APL/JHU TG-230-T126, 11 Nov 60, 7p.

DESCRIPTORS: *Wave transmission, *Sound transmission, *Shock waves, Air, Water, Quartz.

For abstract see Technical Translations 5: 478, 1961.

Schumann, Winfried Otto.
PROPAGATION OF LONG ELECTRICAL WAVES IN A MAGNETIZED PLASMA AND THEIR PASSAGE THROUGH PLASMA LAYERS. [1962] 17p. 14 refs.
Order from SLA $1.60 62-18276

Trans. of Zeitschrift für Angewandte Physik (West Germany) 1958, v. 10, no. 9, p. 428-433.

DESCRIPTORS: *Electromagnetic waves, Propagation, Magnetic fields, *Plasma physics, Damping.

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

COMMUNIST CHINA'S SCIENCE AND TECHNOLOGY [SELECTED] TRANSLATIONS NO. 24. 8 Apr 63 [35]p. 3 refs. JPRS: 18588.
Order from OTS $1.00 63-21527

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1962, no. 9, p. 3-15 and Wu Hsien Tien (Chinese People's Republic) 1962, no. 10, p. 1-2, 13.

DESCRIPTORS: Scientific research, *China, *Proteins, *Proteins (Simple), *Chemistry, Molecular structure, Biochemistry, Enzymes, Enzyme precursors, Amino acids, *Textile industry, Industrial equipment, *Electronic equipment

Contents:
Progress in protein chemistry, by Ts'ao T'ien-ch'
Application of electronics in textile industry, by Ch'en Chin-ching

EAST GERMAN AND HUNGARIAN ELECTROCHEMICAL RESEARCH. 6 Mar 63 [10]p. JPRS: 17978.
Order from OTS $0.50 63-21258

Trans. of Muszaki Elet (Hungary) 1963 [v. 18] 17 Jan, p. 7 and 10.

DESCRIPTORS: *Electrochemistry, Measuring devices (Electrical and electronic), *Gravity anomalies, Magnetic fields, *Radiation measurement systems components, *Scintillation counters, *Explosions, *Warning systems, Gas detectors.

Contents:
Electrochemical measurement methods: K.Schwabe
Anomalies of the gravitational field: D. Zidarov
Scintillation heads for radiation detection
"Alarmik" device warning of danger of explosion.

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING NO. 114. 22 Mar 63 [14]p. JPRS: 18292.
Order from OTS $0.50. 63-21388

Trans. of Magyar Tudomany (Hungary) 1962, v. 7[69] no. 8, p. 521-525 and Akademiya Nauk URSR, Kiev. Dopovidi, 1962, no. 12, p. 1553-1554.

DESCRIPTORS: *Conferences, *Machine translation, *Language, *Applied mathematics, Cybernetics, *Coding, Computer memory devices, Digital computers, Algorithms.

Contents:
Work conference on the problems of mathematical linguistics and machine translation, by Gyorgy Szepe
The coding of abstract automats, by Yu V. Kapitonova and V. M. Glushkov.

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING NO. 116. 28 Mar 63 [33]p. JPRS: 18406.
Order from OTS $1.00 63-21441

Trans. of Avtomatyka (USSR) 1962, v. 7, no. 6, p. 10-19 and 60-64.

DESCRIPTORS: *Cybernetics, *Artificial intelligence, Pattern recognition, Information theory, Digital computers, *Learning, Reasoning, Statistical analysis, *Statistical functions, Algorithms, Computer logic, Computer storage devices, Control systems, Synthesis, Machine translation

Contents:
A learning system which utilizes statistical decision functions, by S. F. Kozubovs'kyi
The advantage of one-layer cognitive learning systems, by O. G. Ivakhenko

LONG RANGE PLANS FOR DEVELOPMENT OF SCIENCE. 15 Mar 63 [29]p. JPRS: 18156.
Order from OTS $0.75 63-2133

Trans. of Zycie Szkoly Wyzszej (Poland) 1959 [v. 7] no. 4, p. 8-14; Nauka Polska, 1959 [v. 7] no. 3, p. 1-16; and from Trybuna Ludu (Poland) 1959, no. 31, p. 6

DESCRIPTORS: *Scientific research, *Poland, Production *Economics, *Political science, Universities, Sociology, Scientific organizations.

Contents:
Long range plan for science, by Wlodzimierz Michajlow
Duties of science in building socialism, by Henryk Jablonski
Principles for preparing long range plans of scientific development, by Witold Nowacki.

NLL TRANSLATIONS BULLETIN, 1962, VOL. 4, NO. 2, p. 111-212. Feb 62, 1v.
Order from HMSO $0.77, $9.86/year

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DESCRIPTORS: *Petroleum, Organic materials, Distillation, *Hydrocarbons, Production, *Well drilling, Pipes, Reinforced concrete, Machines, Automation, Boats, *Fishes, Preservation, Fisheries.

Contents:
Possibilities for the production of raw material for petroleum chemistry at the petroleum processing plants of the USSR, by I. R. Osadchenko and V. L. Klimenko
Ferro-concrete wells, by K. Averyanov
Mechanization and automation at undertakings of the Leningrad Council of National Economy, by P. D. Khizhnyak
A floating fish cannery, by S. S. Vershinin.

SCIENCE AND TECHNOLOGY. 21 Jan 63, 4p. FTD-TT-62-1875.
Order from OTS or SLA $1.10 63-15531

Unedited rough draft trans. from Nedelya (USSR) 1962, no. 6, 4-10 Feb.

DESCRIPTORS: *Scientific research, Fuel cells, Proteins, Ocean currents, Silicones, Geologic age determination.

A brief account of some of the major projects of the academy of science USSR during 1961. (Author)

WORKS ACCEPTED IN COMPETITION FOR 1963 LENIN PRIZES. 8 Apr 63 [17]p. JPRS: 18604.
Order from OTS $0.50 63-21533

Trans. from Pravda, Moscow (USSR) 1963, 19 Feb, p. 3 and 4.

DESCRIPTORS: *Scientific research, *Engineering, *Awards.

Buslenko, N. P.
ON THE SUPERPOSITION OF ORDINARY STEADY FLOWS WITH A LIMITED AFTEREFFECT. 23 Jan 63 [8]p. 1 ref. FTD-TT-62-1383. AD-297 572
Order from OTS or SLA $1.10 63-15732

Unedited rough draft trans. of Problemy Peredachi Informatsii (USSR) 1961, no. 9, p. 79-82.

DESCRIPTORS: *Information theory, Data transmission systems, Statistical functions, Distribution theory.

Erdei, Ferenc and Juvancz, Ireneusz.
THE HUNGARIAN ACADEMY OF SCIENCES AND THE GUIDING PRINCIPLES OF THE EIGHTH CONGRESS OF THE HUNGARIAN SOCIALIST WORKERS' PARTY [AND] THE BASIC CONCEPT OF BIOMETRY AND ITS GENERAL APPLICATION. 27 Mar 63 [25]p. JPRS: 18392.
Order from OTS $0.75 63-21436

Trans. of Magyar Tudomany (Hungary) 1962, v. 7[69] no. 10, p. 655-657 and no. 11, p. 683-[696].

DESCRIPTORS: *Scientific organizations, *Hungary, *Conferences, Scientific research, *Biology, Mathematical analysis, Medical research

Jablonski, Henryk.
AIMS AND COOPERATION TASKS OF THE ACADEMIES OF SCIENCES OF SOCIALIST BLOC COUNTRIES. 19 Mar 63 [18]p. JPRS: 18215.
Order from OTS $0.50 63-21360

Trans. of Nauka Polska, 1962, v. 10, no. 4, p. 8-18.

DESCRIPTORS: *Scientific organizations, *Scientific research, Research program administration.

Strat, V.
CYBERNETICS (Cibernetica). Review of mono. pub. Bucharest, 1961, 475p. 19 Mar 63 [5]p. JPRS: 18226.
Order from OTS $0.50 63-21365

Trans. of Telecomunicatii (Rumania) 1962, v. 6, no. 6, p. 285.

DESCRIPTORS: *Cybernetics, Automation, Control systems, Bionics, Medical research, Digital computers, Artificial intelligence

Zahler, Vita.
MATHEMATICAL LINGUISTICS. 18 Mar 63 [6]p. JPRS: 18166.
Order from OTS $0.50 63-21338

Trans. from Neuer Weg (Rumania) 1963, v. 15, no. 4272, 23 Jan, p. 4.

DESCRIPTORS: *Machine translation, Mathematics, Language, Programming (Computers), Digital computers

Communication Theory

HERALD OF COMMUNICATIONS, 1962 [VOL. 22] NO. 12(273). 25 Mar 63 [164]p. JPRS: 18331.
Order from OTS $3.00 63-21412

Trans. of Vestnik Svyazi (USSR) 1962 [v. 22] no. 12(273) p. 1-37.

DESCRIPTORS: *Periodicals, *Communication systems *Communication equipment, Radio transmitters, Telephone communication systems, Telegraph systems Telephone lines, Electric motors, Postal systems, Radio interference, Transmission lines, Operators (Personnel), Television communication systems, Personnel, Wages, Textbooks, Radio operators, Telegraph equipment, Excitation.

Contents:
For high quality of postal service operation (editorial)
Automated exciter VT-3A, by A. S. Pustovoitovskii
On the methods of monitoring performance quality of radio-broadcasting transmitters, by I. S. Seleznev and A. D. Taranenko
Modernized booth-type telephone with two-way amplifier, by M. A. Slutsker
Interlock of the ATS VRS [dial system of inter-rayon communication service] by I. P. Mechaeva
Analysis of defects in the performance of start-stop apparatus ST-35, by A. S. Selivanov
The branching of two-wire channels at LATs [line-equipment centers] for service linking, by Ya. Yu. Ginzburg
Selection of parameters for the hook-up arrangement of motors, by A. M. Eilentukh and G. M. Zotov
From the experience of operating semiautomatic linke, by N. A. Turkina
Delivery service in the city of Nikolaev is being improved, by N. M. Gordeev
Organization of the control of industrial noise interfering with radio reception and television, by M. L. Zakharov
An experience in the operation of a cable main link in mountain-crossed locality, by S. I. Shaikin
Calculation of telegraph operators staff by combined indices, by I. M. Babashkin
The best communications Branch Office of the Republic, by L. Ya. Yakovlev
Dispatcher's supervision over the movement of mails by means of television system, by M. A. Mishke
A good-hearted person, by E. S. Volkova
On the application of new wage terms at operating enterprises, by K. D. Lunin
Leaders in Socialist competition
Textbooks on telegraphy for higher educational institutions of communications, by A. I. Kordobovskii
Radio amateurs: to the Seven-Year Plan
A unique post office in Odessa, by I. P. Epifanov.
A device for checking the soundness of cords of the ten-step ATS [dial system] selectors, by D. N. Lutsenko

Garmash, V. A.
A METHOD OF CODING MESSAGES BY STATISTICAL CODE. 22 Jan 62 [5]p. FTD-TT-62-1637.
Order from OTS or SLA $1.10 63-15780

Unedited rough draft trans. of Soviet patent 147024 (646826/26) 10 Dec 59.

DESCRIPTORS: *Coding, Statistical distributions, *Communication theory.

A method of coding messages by statistical code is proposed. In order to obtain the code, the message is divided into groups of symbols, containing from one to k symbols. The most or the least probable symbol is used as the dividing sign between groups, while each group obtained is coded by the appropriate combination of the code, the number of elements of the code, the number of elements of the code being determined from the formula $n = \log_a [k (n - 1) + 1]$, where a is the base of the code. (Author)

Kosielski, Romuald.
COMMUNICATIONS IN THE USSR. 19 Mar 63 [7]p. 4 refs. JPRS: 18219.
Order from OTS $0.50 63-21362

Trans. of Przeglad Telekomunikacyjny (Poland) 1962 [v. 35] no. 11, p. 324-326.

DESCRIPTORS: *Communication systems, Abundance, Effectiveness.

Siforov, V. I.
ON NOISE-STABILITY OF A SYSTEM WITH CORRECTING CODES. [1961] 16p. 7 refs. MDF S 110.
Order from OTS or SLA $1.60 62-23077

Trans. of Radiotekh[nika] i Elektr[onika] (USSR) 1956, v. 1, no. 2, p. 131-142.

DESCRIPTORS: Communication systems, *Communication theory, Noise (Radio), Stability, Distortion, Probability, *Coding, Corrections.

The problem posed in this paper is to give a relation, connecting the noise-stability of a communication system in which correcting codes are used, to the parameters of these codes. The amount x of code combinations

is found, which differ from each other by not less than a given number of elements for a given arrangement of all the possible combinations. It is proved that the quantity x depends on the arrangement of the primary combinations. Inequalities are obtained for the greatest amount of combinations x_m, for which any two differ by not less than d elements for small and large values n of the common number of elements in each code combination. It is established that the probability of distortion, p_n, of a code group in a system with correcting codes satisfies the inequality $p_n < f(p, n, d,)$ where p is the probability of distortion of one element. The shape of the f(p, n, d) function is found for large values of n. Graphs of this function are constructed. (Author)

Siforov, V. I.
PARAMETERS OF BINARY CODING SYSTEMS. [1961] 13p. 7 refs. MDF S-111.
Order from OTS or SLA $1.60 62-23029

Trans. of [#Elektrosvyaz (USSR) 1957, v. 11, no. 1, p. 3-10].

DESCRIPTORS: Communication systems, *Communication theory, Data transmission systems, *Coding, Errors, Probability.

The concept of the average probable decoding error for binary transmission is introduced. A relation is found which relates the optimum average probable decoding error to the probabilities of transforming the separate letters. It is proved that the average probable decoding error increases approximately in direct proportion to the length of transmission. Concepts are introduced of the probable decoding error per symbol, the relative probable decoding error, the quality of a coding system and the channel use coefficient. The physical meaning of these parameters is shown by application to binary coding systems. (Author)

Tsybakov, B. S. and Yakovlev, V. P.
THE STRUCTURE OF FUNCTIONS WITH A LIMITED SPECTRUM AND RELATED PROBLEMS IN COMMUNICATIONS THEORY. 3 Apr 63 [19]p. 10 refs.
JPRS: 18510.
Order from OTS $0.50 63-21485

Trans. of Fiziko-Tekhnicheskii Institut, Moscow, Trudy (USSR) 1958, v. 2, p. 13-29.

DESCRIPTORS: *Communication theory, Wave transmission, *Functions, *Series, Inequalities, Real variables, Differential equations, Numerical analysis, Information theory.

Photographic Equipment

Kuz'mina, M. I. and Rusinov, M. M.
WIDE-ANGLE, WIDE-APERTURE OBJECTIVE, THE "KINO-RUSSAR 7". 12 Dec 62 [4]p. FTD-TT-62-1509.
Order from OTS or SLA $1.10 63-15336

Unedited rough draft trans. of Russian patent 141655 (689078/26) 1960.

DESCRIPTORS: Wide-field cameras, *Telephoto lenses, *Photographic lenses, Motion picture cameras, Photographic equipment.

A wide-angle, wide-aperture objective, the "Kino Russar 7" with a focal length of 22.5 mm, a relative aperature of 1:3.5, and an angle of the field of vision of 108° is distinguished by the fact that for the purpose of obtaining the minimum possible dimensions of the lenses for a given field of vision and simplicity in the making there is used in it as the exterior component a telescopic system with angular magnification of 0.5 consisting of two negative meniscuses with spherical surfaces, and as the internal component there is used a five-lens objective of the Gauss type. (Author)

Mal'tsev, M. D.
FIVE-LENS OBJECTIVE WITH HIGH F NUMBER.
12 Dec 62 [5]p. FTD-TT-62-1508.
Order from OTS or SLA $1.10 63-15337

Unedited rough draft trans. of Russian patent 141654 (685253/26) 1960.

DESCRIPTORS: *Photographic lenses, Design, Motion-picture cameras, Photographic equipment.

A description is given of a five-lens objective with high f number with relative aperture 2 to 2.5, covering a fram 24 x 36 mm, with insignificant vignetting of the edges of the margin, which is distinguished by the fact that for the purpose of simplifying the design there was developed a new type of objective, consisting of five lenses, grouped in three components, consisting: first, of one meniscus positive lens, and second and third, of two lenses each, one of which is positive and the other negative, whereby the negative lenses are turned towards the aperture diaphragm, placed between the second and third components. (Author)

SOCIAL SCIENCES

RECENT REPORTS ON SOCIAL SCIENCES IN THE USSR ACADEMY OF SCIENCES. 9 Apr 63 [36]p.
JPRS-18606.
Order from OTS $1.00 63-21535

Trans. of Voprosy Filosofii (USSR) 1963 [v. 17] no. 1, p. 126-142.

DESCRIPTORS: *Social sciences, Reports, Philosophy, Physiology, Nervous system, *Psychology, *Communism, Sociology, Economics, Political science.

Contents:
Results of the All-Union Conference on Philosophical Questions Concerning the Physiology of Higher Nervous Activity and Psychology
The construction of Communism and the tasks of social sciences, by M. P. Gapochka and others
The resolution of the session of the general meeting of the USSR Academy of Sciences devoted to the tasks of developing social during the full-scale construction of Communism.

Shaumyan, G. A.
THE THEORY OF LABOR PRODUCTIVITY AND PROBLEMS IN THE DEVELOPMENT OF SCIENCE AND TECHNOLOGY. 1 Apr 63 [16]p. 5 refs.
JPRS: 18478.
Order from OTS $0.50 63-21469
Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Mashinostroenie (USSR) 1962, no. 9, p. 5-14.

DESCRIPTORS: *Industrial production, *Labor, Theory, *Economics, Automation, Industrial equipment, Mathematical prediction.

BOOK REVIEWS

The following book reviews can be ordered by number from OTS or SLA for $1.10 each. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and detailed table of contents.

BR-SOV/6131
Berman, Yakov Isaakovich, and Boris Moiseyevich Gol'din
TUNING AND TESTING OF RADAR APPARATUS (Nastroyka i ispytaniye radiolokatsionnoy apparatury). Leningrad, Sudpromgiz, 1962. 322p. 10,000 copies printed.

BR-CHICOM/6133
Tai, Wen-sai, Jung Shou-k'eng, Miao Yung-k'uan and others.
COURSE IN ASTRONOMY (T'ien Wen Hsüeh Chiao Ch'eng), v. 2 K'o Hsüeh Chi Shu Ch'u Pan She, Shanghai, May 1962, 402p. 3000 copies printed. Compiled by Astronomy Section, Department of Mathematics and Astronomy, Nanking University.

BR-CHICOM/6134
Tai Wen-sai, Li Ch'un-sheng, Ch'ü Ch'inyüeh, and Chu Tzlu-shen.
COURSE IN ASTRONOMY (T'ien Wen Hsüeh Chiao Ch'eng), v. 1, K'o Hsüeh Chi Shu Ch'u Pan She, Shanghai, May 1962, 634p. 3000 copies printed. Compiled by Astronomy Section, Department of Mathematics and Astronomy, Nanking University.

BR-CHICOM/6135
I Chao-hua
COURSE IN CELESTIAL MECHANICS (T'ien T'i Li Hsüeh Chiao Ch'eng), K'o Hsüeh Chi Shu Ch'u Pan She, Shanghai, March 1962, 432p. 3000 copies printed.

BR-SOV/6137
Arzhanykh, I. S.
INVERSION OF WAVE OPERATORS (Obrashcheniye volnovykh operatorov) Tashkent, Izd-vo AN Uzbekskoy SSR, 1962. 163p. 1000 copies printed.

BR-SOV/6138
Rivkin, Solomon Lazarevich
THERMODYNAMIC PROPERTIES OF FUEL COMBUSTION PRODUCTS AND AIR (Termodinamicheskiye svoystva vozdukha i produktov sgoraniya topliv) 2d ed., rev. and enl. Moscow, Gosenergoizdat, 1962. 102p. Errata printed on inside back cover. 7500 copies printed.

BR-SOV/6146
Sergiyenko, Semen Romanovich, and Yevgraf Venediktovich Lebedev
SELECTIVE CATALYTIC DEHYDROGENATION OF HIGH-MOLECULAR HYDROCARBONS (Izbiratel'naya kataliticheskaya degidrogenizatsiya vysokomolekulyarnykh uglevodorodov) Ashkhabad, Izdo-vo AN TurkSSR, 1961. 71p. 500 copies printed.

BR-CHICOM/6151
Kuo, Ch'eng-chi
URANIUM MINING CHEMISTRY (Yu K'uang Hua Hsüeh) K'o Hsüeh Ch'u Pan She, Peking, November 1956, 139p. 6505 copies printed. Compiled by Institute of Geology, Chinese Academy of Sciences.

BR-CHICOM/6152
Ku, Ch'ao-hao, Li Ta-ch'ien, and others.
EQUATIONS OF MATHEMATICAL PHYSICS (Shu Hsüeh Wu Li Fang Ch'eng) 2d ed., K'o Hsüeh Shi Ch'u Pan She, Shanghai, October 1961, 436p. 22,000 copies printed.

BR-SOV/6158
PRESENT PROBLEMS IN PHYSICAL METALLURGY; MATERIALS OF THE SEMINAR HELD IN LENINGRAD HOUSE OF SCIENTIFIC AND TECHNICAL PROPAGANDA, 9 - 11 MAY 1961 (Sovremennyye Voprosy fizicheskogo metallovedeniya; materialy seminara, provedennogo v Leningradskom Dome nauchno-tekhnicheskoy propagandy 9- 11 maya 1961 g.). Leningrad 1962, 60p. (Series: Leningradskiy Dom nauchno-tekhnicheskoy propagandy. Sektsiya metallovedeniya i termoobrabotki. Seriya: Metallovedeniye i termicheskaya obrabotka) 4500 copies printed.

BR-SOV/6159
Musayelyan, Shabo Aslanovich
OBSTRUCTION WAVES IN THE ATMOSPHERE (Volny prepyatstviy v atmosfere). Leningrad, Gidrometeoizdat, 1962. 142p. 2,000 copies printed.

BR-SOV/6160
Kifer, Isaask Iosifovich
TESTING FERROMAGNETIC MATERIALS; MAGNETIC MEASUREMENTS (Ispytaniya ferromagnitnykh materialov; magnitnyye izmereniya). 2d ed., rev. Moscow, Gosenergoizdat, 1962. 543p. 11,000 copies printed.

BR-SOV/6161
Isachenkov, Yevgeniy Ivanovich
STAMPING OF STAINLESS STEEL PARTS (Shtampovka detaley iz nerzhaveyushchey stali). Moscow, Mashgiz, 1962. 53p. (Bibliotechka shtampovshchika, vyp. 9). Errata slip inserted. 9,000 copies printed.

BR-SOV/6168
Pobedonostsev, Yuriy Aleksandrovich
THE ROAD TO SPACE; ACHIEVEMENTS OF SOVIET ROCKET TECHNOLOGY (Put' v kosmos; dostizheniya sovetskoy raketnoy tekhniki) Moscow, Voyenizdat M-va obor. SSSR, 1962. 98p. (Series: Nauchno-populyarnaya biblioteka). 40,000 copies printed.

BR-SOV/6177
RADIOLYSIS OF HYDROCARBONS; SOME PHYSICO-CHEMICAL PROBLEMS (Radioliz uglevodorodov;nekotoryye fiziko-khimicheskiye problemy)Moscow, Izd-vo AN SSSR, 1962. 207p. 5000 copies printed.

TRANSLATIONS IN PROCESS

ULAN BATOR TELEPHONE DIRECTORY, 1962.
Mono. Hariltsaa Ashiglaltyn Tobch Dzaabar ba Ulaanbaator Hotyn Telefon Hereglegchdiyn Jagsaal, 1962, Ulan Bator, 19 Mar 62, p. 1-110.

Akulinichev, I. T.
AMATEUR TELEVISION RECEIVER.
Mono. Lubitel'skii Televizor, Moscow, 1962, p. 1-56.

Akulinichev, I. T.
PRACTICAL QUESTIONS OF VECTOR-CARDIOSCOPY.
Mono. Prakticheskie Voprosy Vektor Kardioskoppii, Moscow, 1960, p. 3-214.

Baevskii, R. M.
FUNDAMENTALS OF PRACTICAL BALLISTO-CARDIOGRAPHY.
Mono. Osnovy Prakticheskoi Ballisto-Kardiografii, Moscow, 1962, p. 3-175.

Baranov, I. B.
COLD WELDING OF PLASTIC METALS.
Mono. Kholodnaya Svarka Plastichnykh Metallov, 2d ed., Moscow, 1962, p. 1-152.

Bolotin, V. V.
NON-CONSERVATIVE METHODS IN THE THEORY OF ELASTICITY.
Mono. Nekonservativnie Zadachi Teorii Uprugoi Ustoichivosti, Moscow, 1961 [339]p.
To be published by Holden-Day, Inc., 728 Montgomery St., San Francisco, Calif. Spring 64.

Gavrilov, N. M.
METHODS IN THE THEORY OF ORDINARY DIFFERENTIAL EQUATIONS.
Mono. Metody Teorii Obyknovennykh Differentisal'nykh Uravnenii, Moscow, 1962 [312]p.
To be published by Holden-Day, Inc., 728 Montgomery St., San Francisco, Calif. Spring 64.

Gol'denblat, I. I.
SOME PROBLEMS OF THE MECHANICS OF DEFORMABLE MEDIA, tr. by Z. Mroz. 1963, 240p.
Mono. [Nekotorye Voprosy Mekhaniki Deformiruemykh Sred] n.p. [1955].
To be published by P. Noordhoff Ltd., P. O. Box 39, Groningen, Netherlands, after Apr 63.

Goncharenko, M. N.
MISSILES AND THE PROBLEM OF ANTIMISSILES.
Mono. Rakety i Problem Antiraket, Moscow, 1962, p. 1-260.

Khovanskii, A. N.
THE APPLICATION OF CONTINUED FRACTIONS AND THEIR GENERALIZATIONS TO PROBLEMS IN APPROXIMATION THEORY, tr. by Peter Wenn, 1963, 244p.
Mono. [Prilozhenie Tsepnuikh Drobei i Ikh Obobshchenii k Voprosam Priblizhennogo Analiza, Moscow, 1956, 203p.]
To be published by P. Noordhoff Ltd., P. O. Box 39, Groningen, Netherlands, after Apr 63.

Krasnoyarskii, V. V. and Reznik, F. M.
CORROSION AND PROTECTION OF MATERIALS: SELECTIONS.
Mono. Korroziya i Zashchita Materialov: Bibliografiya Otechestvennoi Literatury 1917-1959, Moscow, 1961, p. 5-16, 60-61, 71-75, 82-87, 147-153, 164-165, 210-213, 232-234, 240-242, 252-259, 263-267, 268-275.

Lavrent'ev, M. A.
VARIATIONAL METHODS FOR BOUNDARY VALUE PROBLEMS FOR SYSTEMS OF ELLIPTIC EQUATIONS, tr. by J. R. M. Radok. 1963, 152p.
Trans. in process of unidenified Russian mono.
To be published by P. Noordhoff Ltd., P. O. Box 39, Groningen, Netherlands, in last quarter 63.

Lekhnitskii, S. G.
THEORY OF ELASTICITY OF AN ANISOTROPIC BODY.
Mono. Teoriya Uprugosti Anisotropnovo Tela, Moscow-Leningrad, 1950.
To be published by Holden-Day, Inc., 728 Montgomery St., San Francisco, Calif. Spring 63.

Muskhelishvili, N. I.
SOME BASIC PROBLEMS OF THE MATHEMATICAL THEORY OF ELASTICITY, tr. by J. R. M. Radok, 1963, 704p.
Mono. [Nekotorye Osnovnye Zadachi Matematicheskoi Teorii Uprugosti, Moscow, 1954, 647p.]
To be published by P. Noordhoff Ltd., P. O. Box 39, Groningen, Netherlands, after Apr 63.

Pinsker, M. S.
INFORMATION AND INFORMATION STABILITY OF RANDOM VARIABLES AND PROCESSES.
Mono. Informatsiya i Informatsionnaiya Ustoichivost', Moscow, 1960 [201]p.
To be published by Holden-Day, Inc., 728 Montgomery St., San Francisco, Calif. Spring 64.

Proskuriakov, I. B.
EQUATIONS OF MATHEMATICAL PHYSICS.
Mono. Sbornik Zadach po Lineinoi Algebre, Moscow, 1962, 332p.
To be published by Holden-Day, Inc., 728 Montgomery St., San Francisco, Calif. Spring 64.

Rakov, V. I.
INDICATOR DEVICES FOR RADAR STATIONS.
Mono. Idikatornye Ustroistva Radiolokatsionnykh Stantsii, Leningrad, 1962, 532p.

Shklovskii, I. S.
INTELLIGENT LIFE IN THE UNIVERSE.
Mono. Vselennaya Zhizn, Razum, Moscow, 1962, 240p.
To be published by Holden-Day, Inc., 728 Montgomery St., San Francisco, Calif. Fall 63.

Tikhonov, A. N. and Samarski, A. A.
EQUATIONS OF MATHEMATICAL PHYSICS.
Mono. Uravneniya Matematicheskoi Fiziki, Moscow, 1953.
To be published by Holden-Day, Inc., 728 Montgomery St., San Francisco, Calif. Fall 63.

Vainberg, M. M.
VARIATIONAL METHODS IN THE STUDY OF NON-LINEAR OPERATORS.
Mono. Variatsionnie Metodii Isledovaniya Nelineikh Operatov, Moscow, 1965.
To be published by Holden-Day, Inc., 728 Montgomery St., San Francisco, Calif. Fall 63.

Yaglom, A. M. and Yaglom, I. M.
CHALLENGING MATHEMATICAL PROBLEMS FOR COLLEGE STUDENTS, VOL. I.
Trans. in process of unidentified Russian mono. approx. 250p.
To be published by Holden-Day, Inc., 728 Montgomery St., San Francisco, Calif. Fall 63.

Zak, A. F.
THE PHYSICO-CHEMICAL PROPERTIES OF GLASS FIBER.
Mono. Fiziko-Khimicheskie Svoistva Steklyannogo Volokna, Moscow, 1962, p. 1-224.

Zdrodovskii, P. F.
PROBLEMS OF ANTIBACTERIOLOGICAL DEFENSE.
Mono. Voprosy Protivobakteriologicheskoi Zashchity po Dannym Ionostrannoi Literatury, Moscow, 1960, p. 3-320.

PERIODICALS TRANSLATED COVER-TO-COVER

For basic list of Periodicals Translated Cover-to-Cover see Technical Translations, Volume 9, Number 1.

This basic list is kept up-to-date by giving only changes in the subsequent issues of Technical Translations.

No changes are necessary for this issue.